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JAIKRISHNADAS AYURVEDA SERIES

NO. 5

INTRODUCTION TO DRAVYAGUNA (INDIAN PHARMACOLOGY)

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VARANASI-221001 (India)

Telephone : 63022

Telegram : Gokulotsav

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First Edition, 1976

Price : Rs. 20-00

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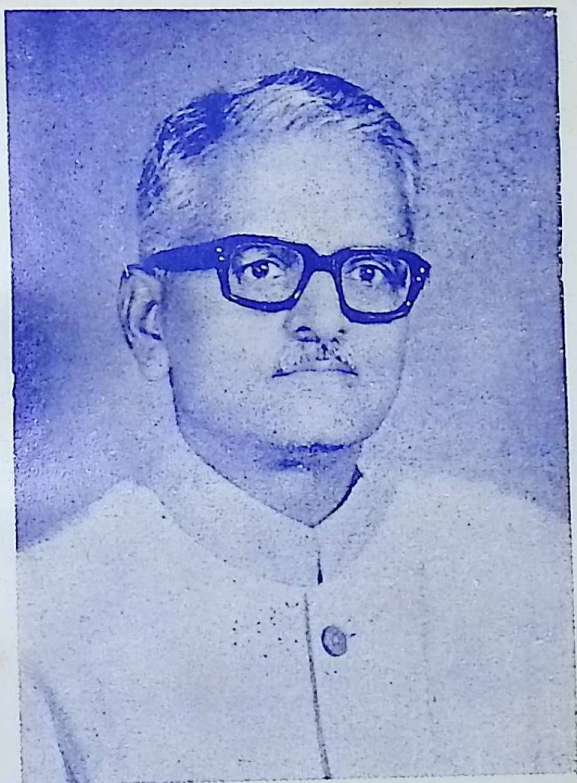
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PREFACE

The story of drugs goes back to the Prehistoric days. The Indian sages invented drugs and their therapeutic uses long ago. This was based partly on observation of the effect of drugs on various animals and partly on human trial and error. Ṛgveda, the oldest document of Indian wisdom, contains material which shows the rational attitude towards plant kingdom and its exploitation for the benefit of the humanity. The Atharvaveda has got more advanced picture and a larger number of drugs used in a similar number of diseases. On this long tradition and accumulated wisdom the ancient sages, Atreya and his disciples, after a deep and concentrated effort were able to make some generalisations for rational explanation of drug action which formed the basic concepts of dravyaguna. Evidently this study was going on in different circles of scholars and as such different schools of thought arose. The school of Suśruta has some differences with Atreya's teachings which was followed by Nāgārjuna.

The theory of Pañca Mahābhūta is the ultimate basis on which the fundamentals of Dravyaguna stand. This is again based on the law of Uniformity in constitution of material bodies including human body on one side and drugs on the other. How to know the Pancabhautic compositions of a drug particularly in its pharmacodynamic aspect? This was attempted in two ways:— one by linking the Rasa as indicator of the Bhautic composition and secondly by observing the sum total effect on the body. Rasas were perceived directly and their effects on the Doṣas were also stand-

(iv)

ardised. Then by law of similarity and dissimilarity their relation with Bhūtas were known by Inference. Thus Rasas are not direct indicators of drug composition but indirect ones through the channel of Doṣas. For instance, Madhura Rasa increases Kapha which is Pārthivāpya in nature, therefore by law of similarity (If there is increase, there is similarity) Madhura Rasa is taken as Pārthivāpya and the drug is also taken as Pārthivāpya. This is again confirmed by law of dissimilarity as it decreases Pitta and Vāta which are dissimilar to Ap and Pṛthvī respectively.

The drugs can't have effect until they are assimilated and metabolised. it was also observed that there was distinct change in ingested material during digestion which further effected the metabolic process. This led to formulation of the theory of Vipāka. In some cases the effect could not be explained rationally on the basis of Rasa. For instance, pippalī (piper longum) is Kaṭu Rasa which should have katabolic effect on the body whereas reverse effect is seen. This led to infer the transformation of Kaṭu Rasa into Madhura Vipāka.

Drug action was the most important problem to be tackled. This led to the evolution of the concept of vīrya which was responsible for drug action. There was, however, difference of opinion among scholars regarding the nature of Vīrya. One group was of conservatives who held potent guṇas (eight or two) as vīryas but Atreya was liberal enough to accept any principle potent enough to produce action as vīrya. On account of vīrya, the pharmacodynamics of drugs was brought to rational level and different actions were explained on its basis. But there were some specific actions which could not be resolved by this. It was

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observed that two drugs which are similar in Rasa, Vīrya and Vipāka differ in action. This difference in action led to formulation of the theory of Prabhāva. Prabhāva is actually the specific composition of the drug which produces a particular type of action. This is said by Caraka as 'Dravya-Prabhāva' (effect of drug-composition) in contrast to 'Guṇa-Prabhāva' which embodies the action on account of Vīrya. Vīrya and Prabhāva are also called as 'Cintya Śakti' (Rational potency) and 'Acintya Śakti' (empirical potency). But it never means that Prabhāva can't be explained. Constant efforts were made to rationalise this aspect which is evident from the fact that many actions which were taken as due to Prabhāva at the time of Caraka were brought within the purview of vīrya by Suśruta and Nāgārjuna. In fact, Prabhāva is dynamic concept having everchanging areas. Empirical action is governed by Prabhāva but as soon as it is rationalised it comes within the area of Vīrya. Thus the word 'Acintya' (unthinkable) is misnomer and may be substituted properly by the word 'Acintita' (unthought) which would make the path of rational thinking always open inviting the dedicated scientists.

While assessing the achievements and contributions made by the Indian authors one must keep in mind their limitations in terms of modern sophisticated instruments and laboratories. This intensifies doubly the value of their scientific observations and conclusions, which proved successful in solving the riddles of Pharmacodynamics. It is not humanely possible to try so many drugs and define their precise actions and uses which are scientifically true in majority of cases even to-day. The study was done by teams of experts for hundreds of years at hundreds of places which

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was recorded and documented at certain periods. This was facilitated by the tradition of symposia and seminars organised in different parts of the country for different topics a glimpse of which is seen in the Caraka Samhitā. It is also certain that for various tests, physiological as well as pathological, there were good laboratories although the test was limited to physical and crude chemical examinations. In a section of the laboratory some animals were also kept for experimentation. There were also good hospitals all over the country of the type mentioned by Caraka and Suśruta a chain of which was revived at the time of emperor Aśoka. So the methodology of study and Research was at the high level.

The dynamism and liberalism are two main qualities which distinguish the Indian scholars particularly in the field of Medicine. There was always exchange of views between Indian and foreign doctors which is evident from the contribution of many new drugs to Pharmacopoea of other countries as well as addition of several unknown drugs to their own Pharmacopoea. Jaṭāmānsī (*Nardostachys*) and Sarpagandhā (*Ranwolfia serpentina*) come in the former group while opium and Ephedra are in the latter group.

My book on Dravyagūṇa was published in Hindi two decades ago (in 1955) keeping in view the acute necessity of a text book on the subject for the Āyurvedic Colleges. But due to limitation of language it could not serve the purpose fully in non-Hindi speaking areas of the country and of the inquisitive scholars working in other parts of the world. Recently interest on Āyurveda has increased to a considerable extent and several scholars come every to this

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country particularly in our institution to learn Āyurveda. Keeping this in view, a certificate course of nine months' duration has been started in our institute from this year for medical graduates of the country and abroad. As there is practically no text book on Dravyagūṇa in English, it posed a very difficult problem for these scholars as well. This book is intended for such readers and my effort would be deemed as fruitful if this object is achieved.

I am thankful to all my friends and colleagues who have helped me in planning and preparation of the subject matter. Shri Maharaj Narayan Singh also deserves thanks who has been helpful in preparation of the Press copy. I express sincere thanks to the publishers who have come forward to publish this work with zeal and enthusiasm.

Banaras Hindu University,
January 26, 1976.

P. V. Sharma

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The first part of the book is devoted to a general survey of the history of the Indian people. It begins with a chapter on the prehistoric period, and then goes on to deal with the various stages of Indian civilization, from the Vedic period to the present. The author's treatment is comprehensive and well-balanced, and the book is a valuable contribution to the study of Indian history.

The second part of the book is devoted to a detailed study of the various stages of Indian civilization. It begins with a chapter on the Vedic period, and then goes on to deal with the various stages of Indian civilization, from the Vedic period to the present. The author's treatment is comprehensive and well-balanced, and the book is a valuable contribution to the study of Indian history.

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**INTRODUCTION
TO
DRAVYAGUṆA
(INDIAN PHARMACOLOGY)**

INTRODUCTION
TO
DRAYAGUNA
(INDIAN PHARMACOLOGY)

SECTION I
BASIC CONCEPTS

SECTION I
BASIC CONCEPTS

CHAPTER I

DEFINITION, SCOPE AND BACKGROUND

Definition :

Dravyagūṇa is the science of drugs (Dravya), their properties and actions (Guṇa).

Scope :

It deals with various aspects of the knowledge about drugs such as identification, properties, actions and uses. It also includes dosage, compatibility and processing of drugs. Accordingly it is divided into the following branches :—

1. *Pharmacognosy* (Nāma-rūpa-vijñāna) :

It deals with various names and synonyms (Nāma) of drugs and also their morphological characters (Rūpa). Most of this information is gained by the help of synonyms.

2. *Pharmacology* (Guṇa-karmavijñāna) :

It discusses the properties (Guṇas) and actions (Karma) of drugs. The action of drugs is interpreted on the basis their properties.

3. *Therapeutics* (Prayoga-vijñāna) :

On the basis of properties and actions, it describes the uses of drugs in various ailments, the dosage and vehicles (Anupāna). The diet prescribed or restricted for the patient (Pathya-Apathya) also comes under this because diet plays important role in Āyurvedic therapy.

4. *Pharmacy* (Bheṣaja-kalpanā) :

Storage and collection of drugs, various processings by which the drug becomes fit for use of the patient are discussed under this branch.

Background :

The edifice of the drug-science of Ayurveda stands on the foundation of the basic fundamentals of Pañcamahābhūta & Tridoṣa. The five Mahābhūtas (Pṛthvī, Ap. Tejas, Vāyu and Ākāśa) constitute the animal body as well as the vegetable and mineral kingdoms. This similarity in constitution of body tissues and drugs is the basis of drug action which is either stimulating (Br̥hhaṇa) or depressing (Laṅghana). Drugs having constitution similar to tissues stimulates them while dissimilar causes depression.

While the Mahābhūtas are physical basis of the body, the three doṣas (Vāta, Pitta and Kapha) are their biological representatives responsible for physiological functions in the state of homeostasis, and for pathological disorders in the state of imbalance. The composition of drugs and their properties is described on the basis of Mahābhūtas while their action is described in applied manner on the basis of Tridoṣa.

As the theory of Pañca Mahābhūta plays important role in composition of Dravya and its properties it would be worthwhile to consider it before we proceed further.

Theory of Pañca Mahābhūta and its implications :

Pañca Mahābhūtas are the material basis of the universe so are for the living body. The gross body of a living being consists of Pañca Mahābhūtas and life processes which are due to consciousness. Five Mahābhūtas along with consciousness are called six Dhātus (components) and the living Person is said as composed of these Dhatus (Ṣaḍdhātwātmaka). On combination with consciousness, Pañcamahābhūtas, out of their some portions, constitute three Doṣas in

order to perform and regulate the physiological processes. Tridoṣas are found only in living body while Pañca mahābhūtas are everywhere, animate or inanimate.

There are three evolutionary states of Mahābhūtas :—
 1. Bhūta 2. Mahābhūta and 3. Dr̥śya bhūta. Bhūta is the atomic state which is eternal in view of the Vaiśeṣika Philosophy. When two atoms combine it is called Dwyaṇuka (Di-atomic) and when three dwyaṇukas combine it becomes Trasareṇu (tri-atomic). It is at this state that grossness appears and as such it begins to be known as Mahā (gross) bhūta. Trasareṇu of Ākāśa combines with that of Vāyu bhūta and gives rise to Vāyu Mahābhūta. Similarly, Ākāśa, Vāyu and Agni are in the Ap Mahābhūta and Pṛthvī Mahābhūta contains all the four Mahābhūtas. This process of regressive intrusion is called Anupraveśa. After anupraveśa all the Mahābhūtas attain their normal position but for creating material objects they all combine together again in varying proportions and thus Dr̥śya (material) Bhūtas are formed. In each case, there is predominance of one or the other Mahābhūta on which basis the character of the object is defined as Pārthiva, Āpya etc. For instance, when an object is called as Pārthiva it does not mean that it is composed of Pṛthvī alone but it means that it is composed of all the five Mahābhūtas wherein the Pṛthvī Mahābhūta is predominant. Generally, the predominant Mahābhūta is 50% and in the residue portion all the remaining four take their equal share. The Pañca tanmātrā state of sāṅkhya philosophy is the Bhūta or Paramāṇu (Atom) state of Vaiśeṣika Philosophy. Actually, Pañca mahābhūta is the point in Ayurveda where philosophy and science meet together. In regressive manner it goes to the domain of philosophy while in progressive manner it enters into the arena of science.

Table I
Characters and Properties of Mahābhūtas

<i>Mahābhūtas</i>	<i>Property</i>	<i>Physical Character</i>	<i>Sense Organ</i>	<i>Functions</i>	<i>Psychological Property</i>
1. Ākāśa	Śabda	Absence of resistance (apratighāta)	Śrotra	Porousness, Distinction	Sattwa
2. Vāyu	Sparsa	Cala (Movement)	Twak	Sparseness, Lightness, Activity	Rajas
3. Tejas	Rūpa	Uṣṇatwa (Heat)	Cakṣu	Colour, Digestion, Intolerance, sharpness, Braveness, Brightness	Sattwa
4. Ap	Rasa	Dravatwa (Liquidity)	Rasāṇā	Heaviness, Coldness, Oleation, semen.	Tamas
5. Pṛthivī	Gandha	Kharatwa (Roughness)	Ghrāṇa	Solidity, Heaviness	Tamas

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The constitution of modern atom, consisting of protons, electrons and neutrons, is Pāñcabhautika according to

RELATION OF DRAVYAGUNA WITH OTHER BRANCHES OF ĀYURVEDA

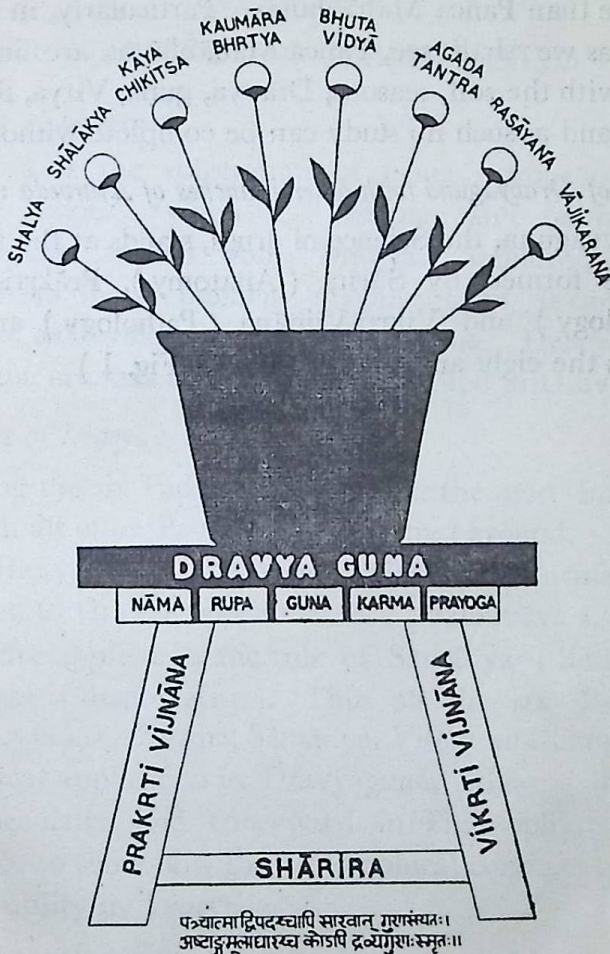


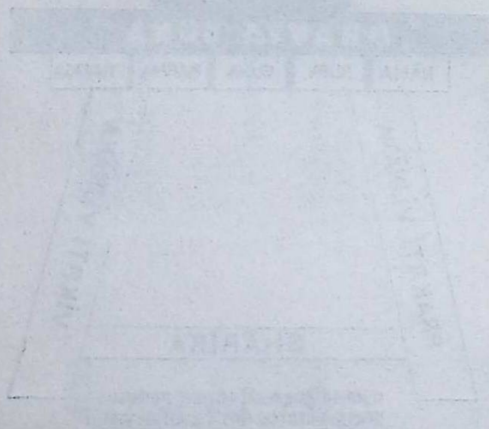
Fig. 1

ancient Indian concept. Weight, cohesion, electricity, movement and spatial relation represent respectively the elements of Pṛthvī, Ap, Tejas, Vāyu and Ākāśa within the atom.

Pañca Mahābhūtas are the basic foundation on which the anatomy, Physio-Pathology and Pharmacology of Ayurveda stands, that is why Suśruta has said to the extent that there is no need of any other subject of consideration in medicine than Pañca Mahābhūtas. Particularly, in Pharmacology, as we shall see, Pañca Mahābhūtas are intimately related with the soil, seasons, Dravya, guṇa, Vīrya, Rasa and Vipāka and as such no study can be complete without them.

Relation of Dravyaguna with other branches of Āyurveda :

Dravyagūṇa, the Science of drugs, stands at the apex of Triangle formed by Śārīra (Anatomy), Prākṛti-Vijñāna (Physiology) and Vikṛti-Vijñāna (Pathology) and itself supports the eight aṅgas of Āyurveda (Fig. 1)



CHAPTER II

DRAVYA AND ITS CLASSIFICATION

Definition of Dravya :

Dravya is the substratum of Guṇa (properties) and Karma (Action). Guṇa and Karma can't be taken in abstract form isolated from Dravya. Similarly, though Dravya stays for a moment in pure form, it cannot be thought of as devoid of Guṇa and Karma. Hence, Guṇa and Karma are said to be inherently related to Dravya.

Importance of Dravya :

Among the six Padārthas, Dravya is the most important one which all other Padārthas are centred around. As said above, Dravya is the substratum of Guṇa and Karma which are related to Dravya with inherence (Samavāya). Again, Dravyas are applied by the rule of Sāmānya (Similarity) and Viśeṣa (dissimilarity). Thus all the six Padārthas (Dravya, Guṇa, Karma, Sāmānya, Viśeṣa and Samavāya) get practical application in Dravyaguṇa, whereas they are purely speculative and conceptual in Philosophy. This is an instance to show how the philosophical concepts have got practical utility in Āyurveda.

Bhautikatvā and Auśadhatva of Dravyas :

All Dravyas are Pañcabhautika in this context. The living animals and plants are used in dead form and as such, devoid of Ātma (consciousness), they remain only as Pañcabhautika.

All Dravyas can be used as drug. Any dravya can be termed as drug only on the condition that it is used for a definite purpose (Artha) and with rationale (Yukti). Hence purposiveness and rationality are two essential conditions for any Dravya to be used as drug.

Classification of Dravyas :

Dravyas have been classified in various ways. Some of the important classifications are as below :

A. According to source :

Dravyas are of three types according to source :

1. Audbhida (Plant products) — Arjuna, Aśoka etc.
2. Jāngama (animal product) — Musk, Civet etc.
3. Pārthiva (Minerals) — Mercury, Iron etc.

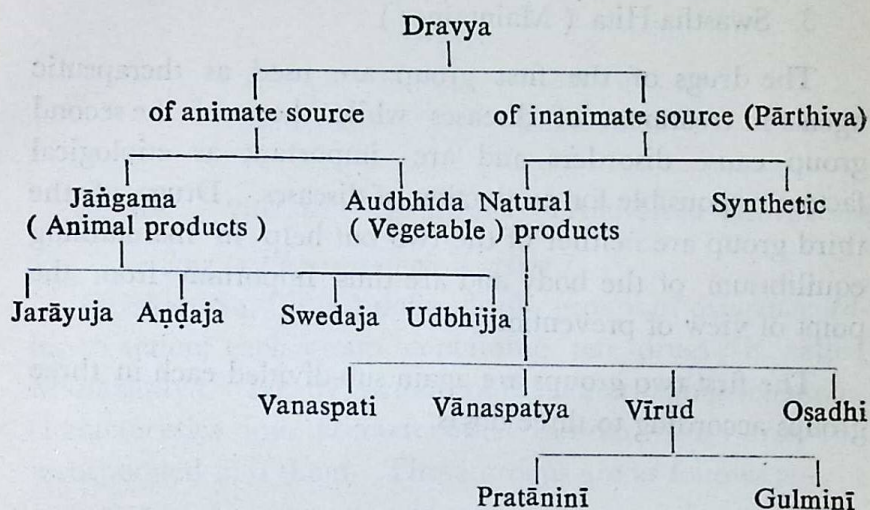
Audbhida Dravyas are again subdivided into four groups as their source plants are of four types according to their botanical characters :

1. Vanaspati (Big trees and those having fruits but no apparant flowers) — Coniferous plants, Banyan tree etc.
2. Vānaspatya or Vṛkṣa (Medium-sized trees having both flowers and fruits) — Mango, Haritaki etc.
3. Vīrud (Shrubs and weak plants) — Sārivā, Śara etc.
4. Oṣadhi — Balā, Citraka etc.

Similarly, the animals, source of Jāngama Dravyas, are of four types :

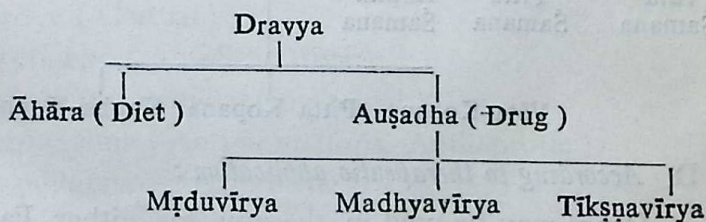
1. Jarāyuja — Mammalians
2. Anḍaja — Birds, Fishes
3. Swedaja — Insects.
4. Udbhijja — Frog, earworm etc.

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Table II*Classification of Dravya according to source :***B. According to use :**

Dravyas are used as either diet (Āhāra) or drug (Auśadha). Auśadha Dravya is again of three types according to Vīrya :

1. Mr̥duvīrya 2. Madhyavīrya 3. Tīkṣṇavīrya.

Table III*Classification of Dravya according to use :***C. According to effect on Doṣas :**

According to effect on Doṣas and Dhātus, Dravyas have been grouped as :

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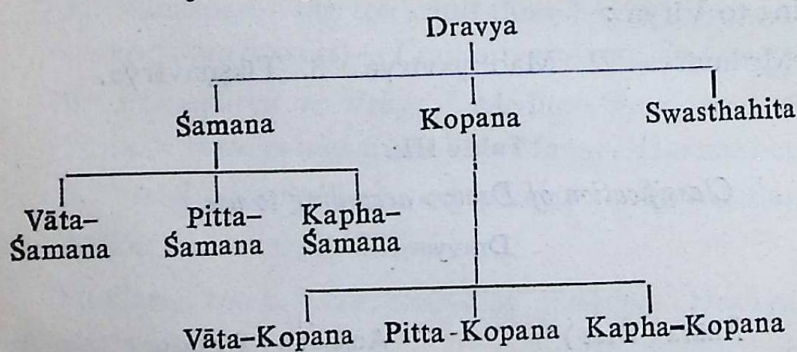
1. Doṣa-Praśamana (Pacifier)
2. Dhātu-Pradūṣaṇa (Vitiator)
3. Swastha-Hita (Maintainer)

The drugs of the first group are used as therapeutic agents in treatment of diseases while those of the second group—cause disorders and are important as etiological factors responsible for production of diseases. Drugs of the third group are neither of the two but help in maintaining equilibrium of the body and are thus important from the point of view of prevention.

The first two groups are again sub-divided each in three groups according to three doṣas.

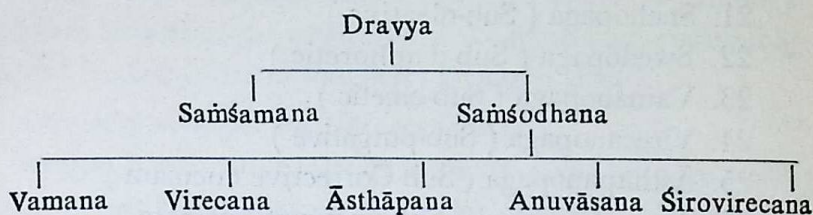
Table IV

Classification of Dravya according to effect on Doṣas :



D. According to therapeutic application :

Drugs may be used in therapy for either Pacifying or expelling out doṣas which are called as saṁśamana and saṁśodhana respectively. Saṁśodhana is again of five types known as Pañcakarma (Five purificatory measures).

Table V*Classification of Dravya according to therapeutic application :***E. According to Pharmacological action :**

Caraka (Su. Ch. 4) defined fifty groups of drugs according to action; each group containing ten drugs is called Mahākaṣāyā. But by method of induction taking common characteristics into account other similar drugs may be incorporated into them. These groups are as follows :—

1. Jīvanīya (Vitaliser)
2. Br̥mhanīya (Bulk-promoting)
3. Lekhanīya (emaciating)
4. Bhedanīya (Scabula-breaking)
5. Sandhānīya (Healing)
6. Dīpanīya (Appetiser)
7. Balya (Tonic)
8. Varṇya (Complexion-Promoting)
9. Kanṭhya (Beneficial for throat)
10. Hr̥dya (Cordial)
11. Tṛptighna (Anti-Saturative)
12. Arśoghna (Anti-haemorrhoidal)
13. Kuṣṭhaghna (Anti-dermatosis, Antileprotic)
14. Kaṇḍūghna (Anti-pruritic)
15. Kṛmighna (Anthelmintic)
16. Viśaghna (Anti-poison)
17. Stanyaajanana (Galactagogue)
18. Stanyaśodhana (Galactodepurant)

19. Śukrajanana (Semen-promoting)
20. Śukraśodhana (Semen-depurent)
21. Snehopaga (Sub-oleative)
22. Swedopaga (Sub-diaphoretic)
23. Vamanopaga (Sub-emetic)
24. Virecanopaga (Sub-purgative)
25. Āsthāpanopaga (Sub-Corrective enemata)
26. Anuvāsanopaga (Sub-unctuous enemata)
27. Śīrovirecanopaga (Sub-errhines)
28. Chardinigrahaṇa (Anti-emetic)
29. Tṛṣṇānigrahaṇa (Anti-dyspic)
30. Hikkānigrahaṇa (Anti-hiccough)
31. Purīṣasaṅgrahaṇīya (Intestinal-Astringents)
32. Purīṣavirajānīya (faecal depigmenter)
33. Mūtrasaṅgrahaṇīya (Anti-Diuretic)
34. Mūtravirajānīya (Urinary depigmenter)
35. Mūtravirecanīya (Diuretic)
36. Kāśahara (Anti-Cough, Anti-Tussive)
37. Śwāśahara (Antidyspneic)
38. Śwāyathuhara (Antiphlogistic)
39. Jwarahara (Antipyretic)
40. Śramahara (Energy-compensater, Acopic)
41. Dāhapraśamana (Refrigerant)
42. Śītapraśamana (Calefacient)
43. Udardapraśamana (Anti-allergic)
44. Aṅgamarda praśamana (Anti-bodyache)
45. Śūlapraśamana (Intestinal antispasmodic)
46. Śonitasthāpana (Haemostatic)
47. Vedanāsthāpana (Analgesic)
48. Saṁjñasthāpana (Resuscitative)
49. Prajāsthāpana (Anti-abortifacient)
50. Vayaḥsthāpana¹ (Gerontologic)

It is to be noted that this grouping starts with Jīvaniya and ends with Vayaḥsthāpana which indicates author's objective as well as the objective of Ayurveda e.g. promoting health (Swāsthya) and longevity (Dirgha Āyu).

F. According to action and therapeutic use :

Suśruta has arranged drugs in thirty seven groups each group having indication in particular diseases. Caraka has named the groups on the basis of action while suśruta has done it on the typical drug in the group. For instance, Jīvaniya group of Caraka is Kākolyādi of Suśruta, kakoli being the typical representative drug of that group.

The groups defined by Suśruta with indications are as follows :

1. Vidārigandhādi — Pitta-Vāta, Gaseous tumour, emaciation, Lassitude, Dyspnoea, Cough.
2. Āragvadhādi — Kapha, poison, Diabetes, Skin diseases, fever, vomiting, ulcers.
3. Varuṇādi—Kapha, Meda, headache, gaseous tumour, Internal abscess.
4. Viratarvādi — Vāta, Calculi, Dysuria.
5. Sālasārādi²—Kapha, Meda, Skin diseases, Diabetes, Anaemia.
6. Rodhrādi—Kapha, Meda, Uterine disorders, Astringent, Anti-poison, Promotive for Complexion.
7. Arkādi—Kapha, Meda, Worms, Skin diseases, ulcers.

¹ For detailed list of drugs see Appendix I.

² Dallaṇa, the Commentator on Susruta Samhita is wrong in explaining 'Śālasāra' as Heartwood (sāra) of the tree Śāla. Actually the word 'Śālasāra' is a synonym of Śāla meaning the cream (sāra) of trees (sāla). Perhaps due to this confusion, Vāgbhaṭa has changed this gaṇa as Asanādi. Ravigupta in his Siddhasāra-nighantu has rightly named it as 'Śālādi'.

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8. Surasādi — Kapha, Worms, Respiratory diseases, Anorexia, ulcers.
9. Muṣkakādi — Meda, Śukradoṣa, Diabetes, Piles, Anaemia, Calculi.
10. Pippalyādi — Kapha, Vāta, Respiratory disorders, Anorexia, appetiser, digestive, Gaseous, tumour, Colics.
11. Elādi — Vāta, Kapha, poison, urticaria, itching, improves complexion.
12. Vacādi. }
13. Haridrādi } Purify breastmilk, indigestion, diarrhoea,
Digestive.
14. Śyāmādi — Purgative, Carminative, Anti-poison.
15. Br̥hatyādi — Tridoṣa, Digestive, Diuretic.
16. Paṭolādi — Kapha, Pitta, Antipyretic, gastritis, skin-disorders.
17. Kākolyādi—Vāta, Pitta, Rakta, Jivaniya, Br̥mhaṇa, Vṛṣya, Stanyajanana.
18. Ūṣakādi — Kapha, Meda, urinary Calculi, Gaseous tumours.
19. Sārivādi — Rakta, Pitta, Thirst, burning sensation, Pittajwara.
20. Añjanādi — Rakta, Pitta, Anti-poison, burning sensation.
21. Parūṣakādi — Vāta, Anorexia, Thirst, Dysuria.
22. Priyaṅgwādi }
23. Ambaṣṭhādi } —Pitta, Astringent. Healing, Wounds.
24. Nyagrodhādi — Rakta, Pitta, Meda, burning sensation, Uterine disorders, astringent, healing of wounds and fractures.

(17)

25. Guḍūcyādi — Appetiser, Antipyretic, Anti-emetic, Thirst, Burning sensation.
 26. Utpalādi — Pitta, Rakta, Burning sensation, Thirst, Poison, Vomiting, Palpitation, Loss of Consciousness.
 27. Mustādi — Kapha, Uterine disorders, Digestive, Purifies breast Milk.
 28. Triphalā — Kapha, Pitta, Digestive, Beneficial for eye, Diabetes, Skin diseases, intermittent fevers.
 29. Trikaṭu — Kapha, Meda, Skin diseases, Diabetes, Loss of appetite, Gaseous tumour, Nasal Catarrh.
 30. Āmalakyādi — Kapha, Appetiser, Anti-pyretic, Beneficial for eye and semen, Pyrexia.
 31. Trapwādi — Poison, Worms, Diabetes, Anemia, Heart disease.
 32. Lākṣādi — Kapha, Pitta, Skin diseases, Worms, Chronic ulcers.
 33. Laghu Pañcamūla — Vāta, Pitta, Growth-promoting, Tonic.
 34. Bṛhat Pañcamūla — Kapha, Vāta, Appetiser.
 35. Daśamūla — Tridoṣa, digestive, Anti-pyretic.
 36. Valli Pañcamūla
 37. Kaṇṭaka Pañcamūla
- | | |
|---|---|
| { | Blood disorders, Kapha,
Swelling, Diabetes, Semen disorders. |
|---|---|
38. Tṛṇa Pañcamūla¹ — Rakta, Pitta, Diuretic.

A comparative study with regard to similarity in the Gaṇas of Caraka and Suśruta may be interesting (Table VI).

¹ For detailed list of drugs see Appendix II.

Vāgbhāṭa, in his Aṣṭāṅga Saṁgraha, added two more Pañcamūlas (Jīvanīya and Madhyama) and a new group, Vatsakādi, useful in gastrointestinal disorders. He has also changed nomenclature of certain Gaṇas such as Padmakādi for Kākolyādi and Asanādi for Śālasārādi. Out of the fifty Gaṇas of Caraka he has left five Gaṇas relating to Pañcakarma. In the chapter relating to Saṁśodhana and Saṁśamana, the groups of drugs used in smoking have been added.

Thus it is evident that the ancients have classified drugs with a view to their morphological characters as well as pharmacological activity. In the first group comes the classification on the basis of root¹ (Daśamūla etc.), stem (Vallī pañcamūla), thorns (Kaṇṭaka pañcamūla), Bark (Pañca valkala), latex (kṣīri vṛkṣa), leaves (Pañca pallava), Flower (Ādyāpuṣpa), Fruits (Triphalā), Seeds (Caturbīja). These parts are to be used in Medicine. On the other hand, the Caraka's classification of Mahākaṣāyas is typical which is based on the main action of the drug.

Table VI

*Comparative statement of The groups of Drugs described
by Caraka and Suśruta*

<i>Caraka</i>	<i>Suśruta</i>
1. Jīvanīya	Kākolyādi
2. Br̥mhaṇīya	Vidārigandhādi
3. Lekhaṇīya	Mustādi
4. Bhedaṇīya	Śyāmādi
5. Sandhāṇīya	Ambaṣṭhādi, Priyangwādi
6. Dīpaṇīya	Pippalyādi

¹ Caraka has also described 'MŪLINĪ' and 'PHALINĪ' groups of drugs.

*Caraka**Suśruta*

7. Balya	Laghu Pañcamūla
8. Varṇya	Elādi
9. Kaṇṭhya	
10. Hr̥dya	Parūṣakādi
11. Tr̥ptighna	Paṭolādi
12. Ar̥soghna	Muṣkakādi
13. Kuṣṭhaghna	Āragvadhādi, Sālasārādi
	Arkādi, Lākṣādi
14. Kaṇḍūghna	Elādi, Āragvadhādi
15. Kṛmighna	Surasādi, Lākṣādi
16. Viṣaghna	Rodhrādi, Āragvadhādi,
	Arkādi, Añjanādi
17. Stānyajanana	Kākolyādi
18. Stānyaśodhana	Mustādi, Vacādi,
	Haridrādi
19. Śukrajanana	Kākolyādi
20. Śukraśodhana	Vallī Pañcamūla,
	Kaṇṭāka Pañcamūla
21. Snehopaga	
22. Swedopaga	
23. Vamanopaga	
24. Virecanopaga	Parūṣakādi
25. Āsthāpanopaga	
26. Anuvāsanopaga	
27. Śirovirecanopaga	
28. Chardinigrahaṇa	Nyogrodhādi
29. Tr̥ṣṇānigrahaṇa	Guḍucyādi, Utpalādi,
	Sārīvādi, Parūṣakādi
30. Hikkānigrahaṇa	Bṛhatyādi,
	Vidārigandhādi

<i>Caraka</i>	<i>Suśruta</i>
31. Puriṣa-saṅgrahaṇīya	Rodhrādi, Priyaṅgwādi, Ambaṣṭhadi
32. Puriṣa-virajāṇīya	Nyagrodhādi
33. Mūtra-saṅgrahaṇīya	Nyagrodhādi, Sālasārādi
34. Mūtra-virecāṇīya	Tṛṇa Pañcamūla, Vīratarwādi
35. Mūtra-virajāṇīya	Utpalādi
36. Kāśahara	Vidārigandhādi
37. Śwāsahara	Pippalyādi
38. Śothahara	Daśamūla
39. Jwarahara	Sārivādi, Paṭolādi, Āmalakyādi
40. Śramahara	Parūṣakādi
41. Dāha-Praśamana	Sārivādi, Utpaladi, Añjanādi
42. Śīta-praśamana	Pippalyādi, Surasādi
43. Udarda-praśamana	Sālasārādi
44. Aṅgamarda-praśmana	Vidārigandhādi
45. Śūla-praśamana	Pippalyādi
46. Śoṇitasthāpana	Priyaṅgwādi, Añjanādi
47. Vedanāsthāpana	Rodhrādi
48. Saṁjñāsthāpana	Priyaṅgwādi
49. Prajāsthāpana	Vidārigandhādi, Kākolyādi
50. Vayaḥsthāpana	Kākolyādi, Vidārigandhādi
51. Vamana	Ūrdhwabhāgahara
52. Virecana	Adhobhāgahara
53. Śodhana	Ubhayatobhāgahara

A classification based on physical qualities is also seen such as Madhura Varga, Pañcakola, Pañcatikta, Pañcalavaṇa, Amlavarga, Trijāta, Sarvaṣadhi etc. Details of some of the common groups are given in Table VII.

Table VII*Some Common Groups of Drugs*

<i>Groups</i>	<i>Constituents</i>
1. Triphalā	Haritakī, Bibhītaka, Āmalakī.
2. Trikaṭu	Śunthī, Pippalī, Marica.
3. Trijāta	Twak, Elā, Patra.
4. Caturjāta	Trijāta & Nāgakesara.
5. Trimada	Viḍanga, Musta, Citraka.
6. Caturbija	Methikā, Candrasūra, Kālājāji, Yavānī.
7. Pañcakola	Pippalī, Pippalimūla, Cavya, Citraka, Śunthī.
8. Pañcavālkala	Bark of Nyagodha, Udumbara, Aśwattha, Plakṣa, Pāriṣa ¹ .
9. Pañcapallava	Āmra, Jambū, Kapittha, Bijapūra, Bilwa ² .
10. Trṇapañcamūla	Kuśa, Kāśa, Nala, Darbha, Ikṣu.
11. Pañcatiktā	Vāsā, guḍūci, Nimba, Kaṇṭakārī, Paṭola.
12. Bṛhat Pañcamūla	Bilwa, Pāṭalā, Agnimantha, Śyonāka, gambhārī.
13. Laghu Pañcamūla ³	Śālaparnī, Prśniparnī, Kaṇṭakārī, gokṣura, Bṛhatī.

¹ These plants are called as 'Kṣīrī vṛkṣa' (Trees with latex).

² The latter three plants belong to Rutaceae (citrus) family.

³ Suśruta has described five Pañcamūlas—Bṛhat, Laghu, Kaṇṭaka, Vallī and Trṇa. Vāgbhaṭa in Aṣṭāṅgasaṅgraha has added two more Jivana and Madhyama.

⁴ This group has been termed as 'Śothahara' in Maḥākaṣāya groups by Caraka (Sū. 4).

14. Daṣamūla⁴ Bṛhat Pañcamūla & Laghu Pañcamūla.
15. Aṣṭa Varga Jīvaka, Rṣabhaka, Medā, Mahāmedā, Kākoli, Kṣīrakākoli, Rddhi, Vṛddhi.¹

But the foremost is the classification according to Bhautika composition on which the application of drugs depends.

G. According to Bhautika composition :

On the basis of predominance of a certain Mahābhūta, drugs are grouped as Pārthiva, Āpya, Taijasa, Vāyavya and Ākāśīya with their group characters (Table VIII).

From this it is evident that to promote growth and weight we have to apply the Pārthiva drugs. When there is dehydration in the body, the Āpya dravyas are administered. To stimulate Agni as in cases of dyspepsia the Taijasa drugs are used. Almost all the digestive preparations contain such drugs. For counteracting weight and bulkiness as in obesity, the Vāyavya dravyas are useful. Ākāśa is related with śrotas (various channels) and as such in cases of śrotorodha particularly by Āmadoṣa, the Ākāśīya dravyas are applied. Rasas are the best indicators of the bhautika composition of drugs.

From applied point of view, Guru, Snigdha, Tikṣṇa, Rūkṣa and Laghu have been fixed as specific properties of Pṛthvī, Ap, Tejas, Vāyu and Ākāśa respectively.

¹ Bhāvamīśra has recommended four substitutes for these rare drugs as Śatāvarī, Vidāri, Aśwagandhā, and Vārāhī respectively for a pair.

Table VIII
Characters of Pāñcabhautika Dravyas.

Group	Specific Sense Object	Rasa	Properties	Actions
1. Pārthiva	Smell	Madhura, Kaṣāya (Slightly)	Guru, Khāra, Kaṭhina, Manda, Sthira, Viśāda, Sāndra, Sthūla.	Promotive for growth, Weight, Compactness, Stability, Strength, moving downwards (Purgation).
2. Āpya	Taste	Madhura, Slightly Kaṣāya, Amla, Lavaṇa	Śīta, Snigdha, Manda, Guru, Sāra, Drava, Mṛdu, Picchila.	Moistening, oleation, binding, solution, Pleasing.
3. Tajjasa	Vision	Katu, Slightly Amla, Lavaṇa	Uṣṇa, Tikṣṇa, Sūkṣma, Rūkṣa, Khara, Laghu, Viśāda.	Burning, Digestion, Lustre, Complexion, illumination, Tearing, heating, Moving upwards (Emesis).
4. Vāyavya	Touch	Kaṣāya, Slightly Tikta	Sūkṣma, Khara, Śīta, Laghu, Viśāda.	Non-Sliminess, Lightness, Lassitude, Roughening, Movements.
5. Ākāśīya	Sound	Unmanifest	Ślakṣṇa, Sūkṣma, Mṛdu, Vyavayi, Viśāda discriminate.	Softening, Porousness, Lightness ¹ .

1. S. S. U. 41.

CHAPTER III

RASA

Definition :

Rasa is the object of the gustatory sense-organ which is located in the tongue. But it is not only perception of taste but is an indicator of the composition, properties and probable action of the drug.

Apart from the above, in Ayurveda, the word 'Rasa' denotes Pārada (Mercury), expressed juice of a plant and the first of the Dhātus (Rasa) in the body.

Number of Rasas :

There are six Rasas each composed of two Mahābhūtas such as :

- | | | |
|------------|-----------------|-----------|
| 1. Madhura | Pr̥thvī + Jala | (P + J) |
| 2. Amla | Pr̥thvī + Tejas | (P + T) |
| 3. Lavaṇa | Jala + Tejas | (J + T) |
| 4. Kaṭu | Vāyu + Tejas | (V + T) |
| 5. Tikta | Vāyu + Ākāśa | (V + A) |
| 6. Kaṣāya | Vāyu + Pr̥thvī | (V + P) |

Regarding composition of Amla and Lavaṇa Rasas there is difference of opinion between Caraka and Suśruta. The composition given above is as proposed by Caraka while according to Suśruta Amla is composed of Jala + Tejas and Lavaṇa of Pr̥thvī + Tejas. Relatively Guru Guṇa is pre-dominant in Pr̥thvī while in Jala there is predominance Snigdha Guṇa. Although both of them have the same

apparent effect on Doṣas (as vitating Kapha-Pitta and Pacifying Vāta), the difference of opinion is mainly on the nature of their action. Amla is more Snigdha while Lavaṇa is more Guru. But as Pṛthvī and Jala often go together it is very difficult to differentiate their composition and action. For instance, Amla Rasa helps in digestion and thereby helping in assimilation may cause increase in Guru Guna while Lavaṇa Rasa absorbs and retains water. In this way Amla and Lavaṇa should have preponderance of Pṛthvī and Jala respectively. But as Amla increases salivation it may be supposed to contain more Jala Mahābhūta while Lavaṇa due to its property of water retention and thereby increasing heaviness in tissues may be said as containing more Pṛthvī Mahābhūta. Thus it is only a difference in outlook, it does not have any appreciable importance in practical field.

How the composition of a Rasa is known ?

The composition of Rasas has been defined by inference on the basis of their effect on the body. For instance, Madhura Rasa increases Guru and Snigdha Guṇas and thereby increases kapha doṣa and decreases Vāta and Pitta doṣas. Kapha is composed of Pṛthvī and Jala; Madhura which increases it, must be similar in composition. Similarly, Kaṭu Rasa increases Vāta and Pitta and pacifies Kapha. Hence it must be composed of Vāyu and Tejas which are similar to Vāta and Pitta and dissimilar to Kapha. Tikta Rasa pacifies Pitta and as such has no Tejas. Further it increases Vāta and decreases Kapha which indicates predominance of Vāyu in its composition. Tikta Rasa produces lightness and has particular effect of relieving avarodha in Srotas (obstruction in channels) which contain Ākāśa. This indicates existence of Ākāśa Mahābhūta in it in addition to

Vāyu. There are two non-Tejas and Vāta-increasing Rasas-Tikta and Kaṣāya. Out of them, the former, due to lightness, is concerned with Ākāśa while the latter on account of its heaviness indicates Pṛthvī in addition to Vāyu. Kaṣāya has got action on channels opposite to that of Tikta.

Rasa and Anu-Rasa :

It is practically impossible to find a dravya having only one Rasa because dravya is Pāñcabhautika and it is quite natural that by different permutations and combinations of Mahābhūtas, different Rasas are produced and contained in it. The only difference is in the preponderance of a certain Rasa. When a dravya is called Madhura it does not exclude other Rasas but it only means that Madhura Rasa is predominant in the same while other Rasas are subservient, latent or unmanifest. The latter ones are termed as Anu-Rasas. Rasa is manifest, stable, till dry state and is perceived at first while Anu-Rasa is unmanifest, unstable (found only in fresh state) and is perceived in the end. For instance, Haritakī has got five Rasas out of which Kaṣāya is (Predominant) Rasa while other four are Anu-Rasas. Likewise, Rasona (Garlic) has also five Rasas but here Kaṭu is predominant and others are subservient ones.

Keeping in view the multi-Rasa nature of dravyas, sixty therepossible combinations have been proposed in consonance with the identical number of combination of Doṣas. The idea is that a particular combination of Rasa is to be applied in case of the identical combination of Doṣas.

Genesis and variation of Rasas :

Water (Jala) has no manifested Rasa but when it comes down from the sky (Ākāśa) with rains it reaches the

soil (Pṛthvi) where it also gets contact with air (Vāyu) and Heat (Agni). By these combined forces the plant grows and develops in which Jala plays important role because it carries nutrition while circulating in all the tissues. Thus it is also responsible for constitution of various chemical fractions which further act as base of the Rasas. Hence, Jala is the material cause of Rasa. Pṛthvī comes next to it. The other three Mahābhūtas are mainly concerned with variation of Rasas such as Kaṭu, Tikta etc. There may be some variation in proportion due to seasonal variations. In visarga kāla (Varṣā, Śarad and Hemanta) there is predominance of Pṛthvī and Jala while in Ādāna Kāla (Śīśira, Vasanta and Grīṣma) Vāyu is predominant. Grīṣma, Varṣā, and Śarad are the seasons having Agni as preominant. However, the question remains unsolved on the analogy of the causal relation between seed and fruit.

One Rasa may be transformed in to another due to various factors such as time, container, combination, heat, place contamination etc.

Classification of Rasas :

A. The Vedic concept of Agnī-Śomīya has great impact on formulation of the concepts of Indian Medicine. The genesis of embryo by the combination of Śukra (Soma) and Ārtava (Agni); consumation of food (Soma) by Digestive juices and enzymes (Agni); Division of seasonal cycle into visarga (Soma) and Ādāna (Agni) are some of the instances. In the concept of Tridoṣa, Pitta represents Agni and Soma is represented by Kapha. Vāta stands in between as catalytic (Yogavāha) Which acquires the properties of either when comes into contact. In the field of Dravyaguṇa too, this concept plays a vital role. The division of Vīrya into two-

Śīta and Uṣṇa is based on this concept. Likewise, six Rasas have been grouped into two Saumya and Āgneya. The Rasas which contain Agni are Āgneya while those which do not contain Agni are Saumya. Kaṭu, Amla and Lavaṇa are Āgneya Rasas while Madhura, Tikta and Kaṣāya are Saumya Rasas.

Āgneya (Igneous) Rasas :

- | | | |
|---------|---------|-----------|
| 1. Kaṭu | 2. Amla | 3. Lavaṇa |
|---------|---------|-----------|

Saumya (Non-Igneous) :

- | | | |
|------------|----------|-----------|
| 1. Madhura | 2. Tikta | 3. Kaṣāya |
|------------|----------|-----------|

Āgneya Rasas increase Pitta while Saumya Rasas decrease it. If we have to increase Agni as in case of dyspepsia dravyas having Āgneya Rasas will have to be applied. On the contrary, when there is excess of Pitta as in Jaundice and internal Haemorrhages, drugs having Saumya Rasas would be of choice.

Likewise, the Rasas may as well be classified according to Vāyu. Such as Kaṭu, Tikta and Kaṣāya are Vāyavya Rasas while the remaining three are non-Vāyavya.

B. According to liking and effect Rasas have been divided into four groups as :

1. Swādu Hita — (Tasteful and wholesome)
2. Swādu-Ahita — (Tasteful and unwholesome)
3. Aswādu-Hita — (Distasteful and wholesome)
4. Aswādu-Ahita — (Distasteful and unwholesome)

C. According to action Rasas have been grouped as :

1. Chedanīya (Langhana) — Bulk-reducing
2. Upaśamanīya (Bṛmhana) — Bulk-promoting
3. Sādhāraṇa (Medium)

Characters of Rasas :

1. Madhura Rasa—Is pleasant, softening, anointing (in mouth) and attracts ants and bees.
2. Amla Rasa—Causes salivation, Sweating, mouth-cleaning, burning sensation in mouth and throat and is appetiser.
3. Lavaṇa Rasa—Easily soluble, water-retaining, softening, appetiser; produces burning sensation in mouth and throat.
4. Kaṭu Rasa—Causes salivation, Lachrymation, Tingling, sensation in Tongue and Headache.
5. Tikta Rasa—Overshadows all other tastes, is appetiser, mouth-cleaning and produces dryness in mouth.
6. Kaṣāya Rasa—produces clarity, stiffness and traction in tongue and throat, dryness in mouth, pain in cardiac region and heaviness.

Taking salivation as an objective indicator six Rasas may be divided into three groups as :

A. Sialogogues (increasing salivary secretion) :

- | | |
|---------|---------|
| 1. Amla | 2. Kaṭu |
|---------|---------|

B. Anti-sialogogues (decreasing salivary secretion) :

- | | |
|----------|-----------|
| 1. Tikta | 2. Kaṣāya |
|----------|-----------|

C. Altering consistency of saliva :

- | | |
|------------|-----------|
| 1. Madhura | 2. Lavaṇa |
|------------|-----------|

Properties of Rasas :

Properties are actually located in dravya but are projected to Rasas because of their concomitance, these properties actually relate to Mahābhūtās which the Rasas are composed of. Each Rasa contains three guṇas such as :

(30)

1. Madhura	-	S	Ś	G
2. Amla	-	S	U	L
3. Lavaṇa	-	S	U	G
4. Kaṭu	-	R	U	L
5. Tikta	-	R	Ś	L
6. Kaṣāya	-	R	Ś	G ¹

If we consider according to guṇas, there may be six groups each containing three Rasas in order of predominance as :

		I	II	III
1.	R	Ks	Kt	T
2.	S	M	A	L
3.	U	L	A	Kt
4.	Ś	Ks	M	T
5.	G	M	Ks	L
6.	L	T	Kt	A ²

Vagbhata, in the Ś group, places M and Ks in I and II positions respectively.

There are some exception to the above generalisation such as :

-
- ¹ S = Snigdha
 Ś = Śīta
 G = Guru
 U = Uṣṇa
 L = Laghu
 R = Rūkṣa

- ² 1. Kṣ = Kaṣāya
 2. Kt = Kaṭu
 3. T = Tikta
 4. M = Madhura
 5. A = Amla
 6. L = Lavaṇa

1. Meat is Uṣṇa although it is Madhura.
2. Āmalaki is Śīta although it is Amla.
3. Saindhava is not Uṣṇa although it is Lavaṇa.
4. Pippalī is snigdha and Guru although it is Kaṭu.
5. Guḍūcī is Uṣṇa although it is Tikta.
6. Harītakī is Uṣṇa although it is Kāṣāya.

Consideration of six Guṇas in relation to six Rasas is very important from applied point of view because these are the Guṇas which attain the state of Vīrya. In other words, they are active properties which are applicable in the respective six therapeutic measures (Śatkarmas) described by Caraka such as Bṛmhāṇa, Langhana, Swedana, Stambhana, Rūkṣaṇa and Snehana. Guṇas concerned with the above are Guru, Laghu, Uṣṇa, Śīta, Rūkṣa and Snigdha respectively. Keeping these Guṇas in view, Rasas can be applied in the treatment of diseases as above.

Action of Rasas :

Action of Rasas may be studied on the level of Doṣas, Dhātus, Malas, Agni and Srotas.

A. Action on Doṣas :

Madhura, Amla and Lavaṇa Rasas increase Kapha and decrease Vāta; on the contrary, Kaṭu, Tikta and Kāṣāya increase Vāta and decrease Kapha. The Āgneya Rasas (Kaṭu, Amla and Lavaṇa) and Saumya Rasas (Madhura, Tikta and Kāṣāya) increase and decrease Pitta respectively. (Fig. 2)

B. Action on Dhātus :

Madhura is the only Rasa which promotes anabolic activity increasing all the Dhātus and vitality in general. (Table VIII). Amla Rasa, though stimulates such activities by helping Agni, has got decreasing effect on Śukra-

dhātu and as such is not recommended as tonic. Remaining four Rasas are Katabolic in effect. Particularly, Lavaṇa Rasa by increasing water content causes laxity in body.

EFFECT OF RASAS ON DOṢAS

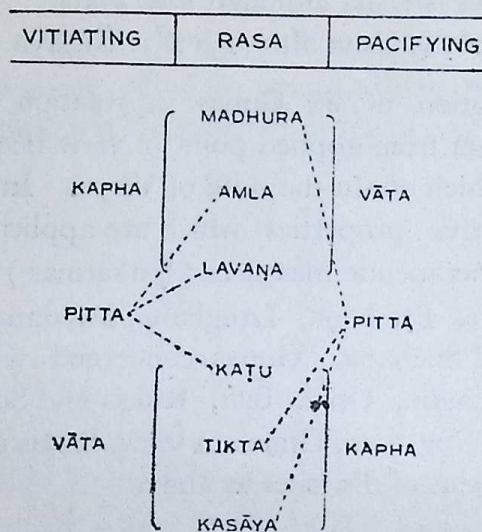


Fig. 2

Kaṭu, Tikta and Kaṣāya have absorbing effect. Particularly Tikta depletes Medas, Vasā, Majjā and Lasikā which are pathogenic factors in Prameha. So these Rasas are important for the treatment of Prameha (Diabetes).

C. Action on Malas :

The group of Pārthivāpya Rasas (Madhura, Amla, Lavaṇa) are laxative, diuretic and carminative While Vāyavya Rasas (Kaṭu, Tikta, Kaṣāya) have opposite effect e.g. they are Constipative, Anti-diueretic and cause obstruction in flatus. Kaṣāya Rasa is best for stambhana (Astrin- gent) action and as such is used in treatment of Diarrhoea, Polyuria, Haemorrhages etc.

D. Action on Agni :

Āgneya Rasas (Kaṭu, Amla, Lavaṇa) are appetiser (Dīpana) and Digestive (Pācana). Tikta though belonging to Saumya group stimulates agni by promoting Samāna Vāta and by absorbing the Kapha (excessive mucus secretion) which is responsible for Mandāgni. The other two Rasas, Madhura and Kaṣāya have adverse effect on Agni.

E. Action on Srotas :

Kaṭu, Tikta and Lavaṇa are srotaḥśodhana (Channel-cleaning), Kaṭu Rasa due to Vāyu and Agni absorbs the fluid and expels the obstructive material. This quality has been termed as Pramāthī (eliminating obstruction by churning) as opposed to Abhiśyandī (channel-obstructing). Tikta Rasa acts in the similar way by absorbing the fluid and slimy material due to Vāta and thus vacating space on account of Ākāśa. Due to Sūkṣma guna it permeates even to the minutest channels. Lavaṇa has no absorbing property but liquifies the solid mass and expels it due to Tikṣṇa guṇa.

The other three Rasas (Madhura, Amla, Kaṣāya) have no such effect, rather they may precipitate srotorodha.

F. General systemic action :

Madhura : Pleasing, brain tonic, healings Anti-abortion, beneficial for burning sensation, thirst, heart, throat, skin, hairs; galactagogue, Antipoison.

Amla : Pleasing, sialogogue, appetiser, digestive, promotes bleeding (Anti-coagulant).

Lavaṇa : Moistening, breaking, appetiser, digestive, sialogogue, expectorent, diuretic, vitiates blood.

Kaṭu : Nervous stimulant, resuscitator, mouth-cleaning, Anthelmintic, promotes bleeding (Anti-coagulant), useful in dyspepsia, cardiac and skin disorders.

Tikta : Anthelmintic, blood-purifier, antipyretic, removes pus, toxins, serous discharges; useful in anorexia, skin diseases, burning sensation.

Kaṣāya : Healing, astringent, absorbent, Anti-diuretic, normalises skin pigmentation.

Therapeutic uses :

Madhura : 1. General debility, geriatric conditions, deficiency of semen.

2. Disorders of Vāta and Pitta.

3. Habitual abortions and deficiency of breast-milk.

Amla : 1. Loss of appetite, dyspepsia.

2. Diseases of Vāta.

Lavaṇa : 1. Loss of appetite, dyspepsia.

2. Cough (as expectorant)

3. As diuretic

4. Disorders of Vāta.

Kaṭu : 1. Loss of appetite, Indigestion, as Anthelmintic, dysentery and sprue.

2. As dentifrice.

3. In disorders of Kapha and Vāta.

4. Obesity, Diabetes.

5. Cough, Coryza, Asthma.

6. Skin diseases.

Tikta : 1. Loss of appetite, dyspepsia, worms, Gastritis, Jaundice.

2. Skin diseases.

3. Fever

4. Obesity and diabetes.

5. Excessive discharges, Pus etc.

Kaṣāya : 1. Diarrhoea

2. Haemorrhage, wounds

3. Polyuria

4. Respiratory disorders

Contra-Indications :

Rasas are contra-indicated in disorders having Doṣas which are excited by them as follows :—

Madhura : diseases caused by Kapha such as cough, Asthma, Diabetes, Filaria, Goitre etc.

Amla : disorders of Pitta and Rakta such as gastritis, Internal Haemorrhage, Jaundice, etc.

Lavaṇa : Disorders of Pitta and Rakta, skin diseases, swelling, Ascites, Hypertension, Haemorrhage, Gastritis etc.

Kaṭu : Disorders of Pitta and Rakta as above, Semen disorders, Retention of Urine.

Tikta : Disorders of Vāta, Semen-deficiency.

Kaṣāya :

1. General debility
2. Loss of appetite
3. Disorders of Vāta.

Diseases caused by excessive use :

Rasas, if used excessively, may produce undesirable effects by exciting similar doṣas such as—

Madhura : obesity, depression, heaviness, loss of appetite, abnormal growths, cough, Asthma, coryza, digestive disorders, vomiting, cold fever, hoarseness of voice, goitre, lymphadenitis, Tumours, filaria, conjunctivitis etc.

Amla : Thirst, disorders due to excess of pitta, disorders of blood, laxity in muscles, dropsy, inflammation and burning sensation.

Lavaṇa : Disorders due to excitation of Pitta and Rakta, thirst, unconsciousness, fever, erosions, necrosis,

Skin diseases, dropsy, falling of teeth, impotency, impairment of sense organs, grey hair, falling of hair, gastritis, erysipelas, eczema.

Kaṭu : Unconsciousness, impotency, languor, debility, wasting, vertigo, burning sensation, thirst, trembling, neuralgia etc.

Tikta : Wasting, roughness in channels, debility, depression, unconsciousness, vertigo, dryness of mouth etc.

Kaṣāya : Dryness of mouth, heart-ache, tympanitis, hoarseness of voice, constipation, impotency, cyanosis, obstruction in flatus, urine, stool and semen; debility, wasting, depression, stiffness, paralysis etc.

Order of administration of Rasas :

A. In medicine :

In treatment of diseases Rasas should be used in a definite order according to Doṣa as follows :

<i>Doṣa</i>	I	II	III
1. Vāta	Lavaṇa	Amla	Madhura
2. Pitta	Tikta	Madhura	Kaṣāya
3. Kapha	Katu	Tikta	Kaṣāya.

B. In diet :

I	II	III
Madhura	Amla-Lavaṇa	Kaṭu-Tikta-Kaṣāya.

In meals, one should start with Madhura and finish with Kaṭu-Tikta-Kaṣāya. In between Amla and Lavaṇa should be taken. But if the food is excessively spicy, the meal should end with Madhura.

Table IX
Properties and Actions of Rasas

Rasa	Properties	Action	Disorders Caused by excessive use
1. Madhura	Snigdha, Śīta, Guru	Bulk-promoting, Vitaliser, Tonic, laxative, Diuretic, increases Kapha, decreases Vāta-Pitta.	Obesity, Anorexia, Respiratory disorders, Goitre, Lymphadenites, Filariā, Diabetes, Worms etc.
2. Amla	Snigdha, Uṣṇa, Guru	Appetiser, digestive, Carminative, useful in Anorexia and harmful for semen, Increases Kapha-Pitta and reduces Vāta.	Blood-disorders, swellings, inflammations, burning sensation, Skin diseases, Anemia, Haemorrhage, Vertigo, defects of vision.
3. Lavaṇa	Snigdha, Uṣṇa, Guru	Moisening, appetiser, digestive, breaking, expectorant, harmful for Semen, Increases Kapha-Pitta and reduces Vāta.	Impotency, grey hairs, falling of hairs, Haemorrhage, Gastritis, Erysipelas, Skin disorders.
4. Kaṭu	Rūkṣa, Uṣṇa, Laghu	Mouth-cleaning, appetiser, digestive, bulk-reducing, Anthelmintic, useful in Dyspepsia, Increases Vāta-Pitta and decreases Kapha.	Impotency, Unconsciousness, Vertigo, debility, burning Sensation, Thirst.
5. Tikta	Rūkṣa, Śīta, Laghu	Appetiser, digestive, Anthelmintic, Antipyretic, Anti-poison, Increases Vāta, decreases Pitta- & Kapha.	Emaciation, debility, Vertigo, dryness of mouth, nervous diseases.
6. Kaṣāya	Rūkṣa, Śīta, Laghu	Astringent, absorbent, Healing, Harmful for Semen, Increases Vāta, decreases Pitta and Kapha.	Dryness of mouth, Cardiac pain, Tympanitis, Obstruction (Constriction) in channels, Impotency, Nervous disorders.

CHAPTER IV

VIPĀKA

Definition :

Vipāka is the transformed state of ingested substance after digestion. This is also called 'Niṣṭhapāka' as opposed to Awasthāpāka¹ (stages of digestion) or Prapāka (initial transformation).

It is said to take place at the time of division of Rasa and Mala after digestion is completed but, in my opinion, it is finalised after the next pāka by Bhūtagnis in liver where most of the drugs are metabolised.

Difference between Awasthāpāka and Vipāka may be summarised as below :

Awasthāpāka (Prapāka)

1. Transformation in stages
2. Production of Doṣas as Malas
3. Perceivable

Niṣṭhapāka (Vipāka)

1. Final transformation
2. Production of Doṣas as Dhātūs.
3. Inferable from actions.

Types of Vipāka :

As there are two final effects on body, Bṛmhaṇa and Laṅghana, the Vipāka is said (by Suśruta) to be of two

¹ There are three stages of digestion-Madhura, Amla & Kaṭu. the first stage begins immediately after ingestion with excess of mucus secretion. The next stage is Amlapāka during which there is secretion of acids and digestive enzymes. The third stage is Kaṭu in which there is excess of Vāyu (Gas formation) due to bacterial fermentation in colon.

types—Guru and Laghu. Caraka takes three Vipākas as Madhura, Amla and Kaṭu. Out of these three Madhura is the same as Guru while Amla and Kaṭu may be included in Laghu². Evidently the former classification is according to effect on Dhatus while the latter one is based on three doṣas. Madhura, Amla and Kaṭu stand for Kapha, Pitta and Vāta respectively. These are the two views mostly accepted by the scholars.

There are certain other views like ṣaḍ-vipākavāda (Six Vipākas according to six Rasas definitely or indefinitely according to predominance of a certain Rasa), Pañca-vipākavāda (Five Vipākas according to five Mahābhūtas) which are matters of interesting discussion but not generally accepted.

Effect of Vipākas :

The effect of Vipākas, according to Caraka, is as in Table X.

Table X
Effect of Vipākas

<i>According to Caraka</i>				
<i>Vipāka</i>	<i>Guṇa</i>	<i>Doṣa</i>	<i>Dhātu</i>	<i>Mala</i>
1. Madhura	Snigdha, Guru.	Kapha-increasing	Semen-increasing	Laxative & Diuretic.
2. Amla	Snigdha, Laghu	Pitta-increasing	Semen-decreasing	-do-
3. Kaṭu	Rūkṣa, Laghu.	Vāta-increasing	-do-	Constipative Anti-Diuretic

² Suśruta does not agree to accept the Amla Vipāka because it is a state of incomplete digestion and not the final state.

According to Suśruta :

<i>Vipāka</i>	<i>Doṣa</i>	<i>Dātu</i>	<i>Mala</i>
1. Guru	Kapha-increasing, Vātapitta-decreasing.	Semen-increasing	Laxative, Diuretic.
2. Laghu	Vātapitta-increasing, Kapha-decreasing.	Semen-decreasing	Constipative, Anti-diuretic.

Genesis of Vipāka :

Vipāka is again based on Pañcamahābhūtās. During digestion, when there is predominance of Pṛthvī and Jala, it causes Madhura (Guru) Vipāka. On the contrary, in case of predominance of the other three Mahābhūtas (Agni, Vāyu and Ākāśa) there is Kaṭu (Laghu) Vipāka.

Degrees of Vipāka :

As Rasas have been grouped according to three degrees, Vipāka is also said to be of three degrees.

	M	A	L	Kt.	T.	Ks.
1. Madhura Vipāka	I	II	III			
2. Kaṭu Vipāka				II	III	I

The Guṇas may also effect the degree of vipāka. For instance, Dravyas having snigdha guṇa will have Vipāka of degree I while those having Rūkṣa guṇa will not have so.

Difference between Rasa and Vipāka :

Vagbhata says—‘The effect of Vipāka is the same as that of Rasa.’ this poses a question what is the necessity of Vipāka separate from Rasa when there is no difference in their effect ? In fact, Vipāka is quite distinct from Rasa. Rasa

is known immediately by the contact of Dravya with the tongue while Vipāka can't be perceived and is only known by inference on the basis of its effects. The effect of Rasa is extended only up to the level of digestion but Vipāka has got systemic effect after metabolism. Rasas, due to their peculiar characters, have various psychological responses immediately but at the level of Vipāka, as it is beyond perception, The feeling of well-being or otherwise comes delayed. This may be summarised as in Table XI.

Table XI*Difference between Rasa and Vipāka :*

<i>Rasa</i>	<i>Vipāka</i>
1. Taste sensation	1. State of metabolic transformation.
2. Immediate response	2. Delayed response
3. Effect localised and extended to the level of digestion.	3. Systemic effect after metabolism.
4. Immediate Psychological response	4. Delayed response of well-being or otherwise.
5. Perceivable	5. Inferable.

Now, it is clear that the systemic actions ascribed to Rasas actually pertain to their respective Vipākas.

CHAPTER V

GUNAŚ

Definition :

Guna is that which is located in Dravya inherently, is causative agent and devoid of property and action.

It means that Guna itself has no action but it qualifies the Dravya for such action.

Number and Classification :

There are forty one Gunaś in all which can be grouped into four categories :

- | | |
|--|----------|
| 1. Gurvādi (Physico-pharmacological) | — 20 |
| 2. Parādi (Para-pharmacological) | — 10 |
| 3. Viśiṣṭa (specific) | — 5 |
| 4. Ādhyātmika (Psychological) | — 6 |
| | <hr/> 41 |

1. Gurvādi Guṇaś :

They are twenty in number and in ten pairs as follows (Table XII).

- | | |
|------------|---------|
| 1. Guru | Laghu |
| 2. Manda | Tikṣṇa |
| 3. Śīta | Uṣṇa |
| 4. Snigdha | Rūkṣa |
| 5. Slakṣṇa | Khara |
| 6. Sāndra | Drava |
| 7. Mṛdu | Kaṭhina |

- | | |
|------------|----------|
| 8. Sthira | Sara |
| 9. Sūkṣma | Sthūla |
| 10. Vtśada | Picchila |

In each pair the two partners having opposite characters balance each other. For example, if there is excess of Guru Guṇa, Laghu Guṇa should be administered to counteract it. These Guṇas are again manifestation of Mahābhūtas which are indicated by them (Guṇas). As Guṇas can't be isolated in pure and abstract form from the Dravya, the use of Guṇas will always have to be considered in the form of Dravya. For this it is necessary to know the Dravyas in terms of Guṇas.

Gurvādi Guṇas are physical as well as pharmacological properties. Guru means a Dravya having more weight and also which produces Gurutva (Heaviness, increase in weight or bulk) in the body. Laghu is quite opposite to the above. Sometimes the words 'Guru' and 'Laghu' are used to denote Heavy and Light in context of digestion. The substances which are hard in digestion are termed as Guru and those which are easily deigestible are called as Laghu. In fact, the latter usage is concerned with the physical character of the substance which affects the response of digestion.

Gurvādi Gṇas are in body tissues on one hand and in diet and drugs on the other hand which influence the former (body tissues). Because they are found in body tissues and the substances influencing them, they are also called as 'Śārīra Guṇas'.

Some other terms in addition to the above twenty Guṇas are seen particularly in Suśruta & Vagbhata such as Vyavāyi, Vikāśi etc. Hence the commentators are of the view

that the number should not be limited to twenty as there may be various Guṇas in different contexts. Enumeration of twenty guṇas only indicate their prominence and popularity.

Parādi Guṇas :

These Guṇas are used in various contexts particularly in Pharmacy and Medicine. They are ten in number as follows :

- | | |
|--------------|--------------------------------|
| 1. Para | (Preferable) |
| 2. Apra | (Not preferable) |
| 3. Yukti | (Rational) |
| 4. Saṁkhyā | (Enumeration) |
| 5. Saṁyoga | (Conjunction or combination) |
| 6. Vibhāga | (Disjunction or division) |
| 7. Prthaktwa | (Separatenses) |
| 8. Parimāṇa | (Weights and measures) |
| 9. Saṁskāra | (Preparation or processing) |
| 10. Abhyāsa | (Regular use) |

Viśiṣṭa Guṇas :

The five specific sense-objects are called as Viśiṣṭa Guṇas. They are Śabda (Sound), Sparśa (Touch), Rūpa (Vision), Rasa, (Taste) and Gandha (Smell).

Ādhyātmika Guṇas :

They are psychological qualities such as :

1. Buddhi (intellect)
2. Icchā (Desire)
3. Dweṣa (Aversion)
4. Sukha (Pleasure)
5. Duḥkha (Pain)
6. Prayatna (Volition)

Importance of Guṇas :

Importance of Guṇas is proved by the following facts :

1. Guṇa supercedes the Rasas and thereby affect the resultant action. For instance, water increases Kapha owing to its natural sweetness but in hot water, the Uṣṇa guṇa supercedes and shows opposite effect e.g. decreases Kapha.
2. In some cases, Guṇa helps Rasa and thereby potentiates its action by way of synergism. For instance, Āmalakī is taken as the best one in the group of Amla Dravyas because of its Mṛdu and Śita Guṇas.
3. Vipāka also more or less depends on Guṇas. Drugs having śītā, Snigdha, Guru and Picchila Guṇas will have Guru Vipāka while the others (Uṣṇa, Rūkṣa, Laghu and Viśada) Laghu Vipāka.
4. Guṇas may be used by various ways internal as well as external such as anointing, bath, Paste etc. while Rasas can be administered internally only.

Table XII
Gurūdi Guṇas

Guṇa	Bhautika Compositon	Effect in Doṣas	Main action	Exempling substance
1. Guru	P + J	Kapha-Vātā	Br̥hmana (Bulk-increasing)	Māṣa
2. Laghu	T + V + A	Vātā-Kapha	Langhana (Bulk-reducing)	Mudga
3. Śīta	J	Vātā + Kapha-Pitta	Stambhana (Cooling)	Candana
4. Uṣṇa	T	Pitta-Vātā-Kapha	Swedana (Heating)	Aguru
5. Snigdha	J	Kapha-Vātā	Kledana (Moistening)	Madhuyaṣṭi
6. Rūkṣa	P + T + V	Vātā-Kapha	Śoṣaṇa (Absorbing)	Yava
7. Manda	P + J	Kapha + Pitta	mandana ¹ (slowing)	Curd
8. Tikṣṇa	T	Pitta-Kapha	Tejana ² (Sharpening)	Citraka
9. Sthira	P	Kapha	Dhāraṇa (stabilising)	Muśālī
10. Sara	V	-Kapha	Preraṇa (Driving)	Senna
11. Mr̥du	J + A	Kapha	Ślathana (Loosening)	Fats
12. Kaṭhina	P	Vātā	Dṛḍhīkarana (Hardening)	Calcium
13. Viśada	P + T + V + A	Vātā	Kṣālana (cleaning)	Alkali
14. Picchile	J	Kapha	Lepana (anointing)	Isafgola
15. Ślakṣṇa	T	Pitta	Ropana (Healing)	Dugdha-pāṣaṇa
16. Khara	V	Vātā	Lekhana (Scraping)	Copper sulphate
17. Sūkṣma	T + V + A	Vātā	Vivaraṇa (Piercing)	Alcohol
18. Sthūlā	P	Kapha	Samvaraṇa (obstructing)	Cakes
19. Sāndra	P	Kapha	Prasādana (Solidifying)	Butter
20. Drava	J	Kapha	Vilodana (liquifying)	Milk

1-2. Hamadri has given Śamana and Śodhana (A. H. Su. 1.18).

CHAPTER VI

VĪRYA

Definition :

Vīrya is the potency by which the drug acts. Vīrya is more dominant in drugs while Rasa is more dominant in dietetic substances.

It is observed that there is a principle in drug which is responsible for its action and in the absence of which there is no action. Thus on the law of agreement in presence and absence (Anvaya-Vyatireka) the existence of Vīrya is proved (C. Su. 26). It is seen in daily practice that a particular part of the plant is used and not all parts at random. The drug also loses action after a certain period or on defective processing. All this led to formation of a hypothesis regarding Vīrya.

Nature of Vīrya :

Vīrya is interpreted differently in terms of Guṇa, Karma or Dravya but the first view (Guṇa-Vīryavāda) is accepted in practice. According to this, Guṇas potent enough to produce action are termed as Vīrya. Out of twenty Guṇas the following eight have been deemed as having potentiality to reach the state of Vīrya :

- | | |
|----------|---------|
| 1. Laghu | 2. Guru |
| 3. Śīta | 4. Uṣṇa |

5. Snigdha

6. Rūkṣa

7. Mṛdu

8. Tikṣṇa¹

Suśruta replaced Laghu and Guru by Viśāda and Picchila Probably because he mentioned Laghu and Guru as two types of vīpāka and thus hesitated to put them again as Vīrya. Caraka himself, in the context of Ṣatkarma (Six therapeutic measures) and also while grouping Rasas according to Guṇas, has left Mṛdu and Tikṣṇa and has limited himself to Six Guṇas. Suśruta has enlisted ten Karmaṇya (Active or potent) Guṇas (Above + Viśāda & Picchila). Nagarjuna, following Suśruta, has also presented a list of ten Karmaṇya (active or potent) Guṇas. It does not mean that other Guṇas are silent spectators and have no action at all. Enumeration of eight Vīryas only indicates the relative importance of these Guṇas in practice but in no way negates the action of other remaining Guṇas.

Again on the ancient style of generalisation, Vīryas have been grouped into two as Śīta and Uṣṇa which represent the primordial factors of Soma and Agni, initiators of creation of the living world. On the level of Doṣa, Śīta Vīrya represents Kapha Varga and Uṣṇa Vīrya Pitta Varga, Vāta remaining as buffer or catalytic (Yoga-vāha). Caraka has given a long list of Śīta Vīrya and Uṣṇa Vīrya dravyas in context of Candanāḍya taila and Agurvāḍya taila respectively (Chikitsa, Ch. 3).

¹ In my Opinion, 'Mṛdu' should be replaced by 'Manda'. In the Context of karmas described by Caraka they should be eight instead of Six, ascribing Mandana and Tejana action to Manda and Tikṣṇa Vīryas respectively. It looks incongruous not to ascribe any action to the above two Vīryas because in this condition their existence as Vīrya itself would fall in danger. Accordingly I have made modification in the table of Guṇas in this respect (see Table. XII)

In view of Caraka, any principle which is responsible for action is Vīrya. For instance, if action is on account of Rasa, the same is Vīrya in that context. Thus the connotation of Vīrya will vary according to context. He does not bind himself to the technical concept of Vīrya according to which a particular potent Guṇa is termed as Vīrya. However, he has mentioned the technical concept without any adverse comment which shows his silent agreement to this as well.

Śivadāsa, in his commentry, says that Vīrya is the potency which is located in a particular fraction of the drug where the potency lies in concentrated form. This, more or less, synchronises with the modern concept of active chemical fractions of the drug which are responsible for action.

Nagarjuna has not fixed any number of Vīryas. He holds that Vīrya may be of unlimited number according to action. He also calls Vīryas in terms of action for which they are responsible. Nimi, one of the followers of Nagarjuna, has enumerated fifteen Vīryas according to prominent actions as follows :

Bhautic Composition

1. Adhobhāga	J + P
2. Ūrdhvaabhāga	T + V
3. Ubhayatobhāga	P + T + V
4. Sāṅgrāhika	P + V
5. Saṁśamana	V + J + P
6. Dīpana	P + T
7. Jīvanīya	P + J
8. Prāṇaghna	V + T
9. Madana	
10. Śītikaraṇa	J
11. Śothakara	P + J

(50)

- | | |
|---------------|-----------|
| 12. Śothaghna | A + V |
| 13. Pācana | T |
| 14. Dāraṇa | V + T |
| 15. Ropaṇa | P + J + V |

In practice, the concept of two Vīryas, Śītā and Uṣṇa, is the most popular one and accepted by all the texts of Dravyaguṇa (Nighaṇṭus).

Bhautika Composition of Vīryas :

- | | |
|------------|-----------|
| 1. Śīta | P + J |
| 2. Uṣṇa | T |
| 3. Snigdha | J |
| 4. Rūkṣa | V |
| 5. Guru | P + J |
| 6. Laghu | T + V + A |
| 7. Mṛdu | J + A |
| 8. Tikṣṇa | T |

Those who accept Viśada and Picchala in this list in place of Laghu and Guru, take Viśada as composed of Vāyu and Agni while Picchila as of Jala.

Effect of Vīryas :

	<i>Effect on Doṣas</i>	<i>General Effect</i>
1. Śīta	Pacifies Pitta, aggravates Kapha and Vāta.	Exhilarant, moistening, cooling, life-promoting, tonic, increases semen.
2. Uṣṇa	Pacifies Kapha and Vāta, aggravates Pitta.	Heating, Digestive, causes loss of consciousness, diaphoresis, emesis, purgations, solution, thirst, Vertigo, depression, decreases Semen.

- | | | |
|------------|---------------------------------|---|
| 3. Snigdha | Pacifies Vāta | Oleation, bulk-increasing, promotes, sexual vigour, Prevents old age. |
| 4. Rūkṣa | Aggravates Vāta, Pacifies Kapha | Astringent, roughening, healing. |
| 5. Guru | Pacifies Vāta | Anointing, bulk-increasing, promotes union and sexual vigour, and semen, filling. |
| 6. Laghu | Pacifies Kapha | Roughening, fluid-absorbing, healing, reduces fat and body weight (bulk). |
| 7. Mr̥du | Pacifies Pitta | Saturates rakta and mamsa, softening. |
| 8. Tikṣṇa | Pacifies Kapha | Constipative, promotes secretions, tearing. |

The extent of the action of Vīrya is right from the contact (Nipāta)—the point of onset-till it is excreted from the body (Yāvadadhivāsa) Which indicates duration of action. Thus Vīrya is known both by Perception and inference while Rasa is known only by Perception and Vipāka by inference.

Determination of Vīrya :

General rule :

Substance having Madhura Rasa and Madhura Vipāka will generally be Śītavīrya such as Madhuyaṣṭī while those having Amla and Kaṭu Rasas as well as Vipākas will be Uṣṇavīrya such as Amlavetasa (Amla) and Citraka. (Kaṭu).

Exceptions :

	<i>Rasa</i>	<i>Vīrya</i>
1. Māṁsa (Meat)	Madhura	Uṣṇa
2. Āmalaka	Amla	Not Uṣṇa

3. Haritaki	Kaṣāya	Uṣṇa
4. Guḍūcī	Tikta	Uṣṇa
5. Brhat Pañcamūla	Kaṣāya-Tikta	Uṣṇa

Importance of Vīrya :

As Vīrya dominates over all the principles, the action of drug is determined mostly by Vīrya. A few instances would suffice to show this :

1. Brhat Pañcamūla	Kaṣāya- Tikta	Pacifies	Vāta due to Uṣṇa Vīrya.
2. Kulattha	Kaṣāya	Pacifies	Vāta due to Snigdha Vīrya.
3. Palāṇḍu (Onion)	Kaṣāya	Pacifies	Vāta due to Snigdha Vīrya.
4. Ikṣu-Rasa	Madhura	aggravates	Vāta due to Śīta Vīrya.
5. Pippalī	Kaṭu	Pacifies	Pitta due to Mr̥du-Śīta Vīrya.
6. Āmalaka	Amla	Pacifies	Pitta due to Mr̥du Śīta Vīrya.
7. Saindhava	Lavaṇa	Pacifies	Pitta due to Mr̥du Śīta Vīrya.
8. Kākamācī	Tikta	aggravates	Pitta due to Uṣṇa Vīrya.
9. Matsya (Fish)	Madhura	aggravates	Pitta due to Uṣṇa Vīrya.
10. Mūlaka	Kaṭu	aggravates	Kapha due to Snigdha Vīrya.
11. Kapittha	Amla	Pacifies	Kapha due to Rūkṣa Vīrya.
12. Madhu	Madhura	Pacifies	Kapha due to Rūkṣa Vīrya

CHAPTER VII PRABHĀVA

Definition :

The specific potency of a drug is known as Prabhāva.

Nature of Prabhāva :

It is seen that two drugs though having similar Rasa, Vipāka and Vīrya differ in action. This difference in action is owing to the specific chemical (Bhautika) composition of the drug and its action can't be explained by general rule on the basis of Rasa, Vipāka and Vīrya. For instance, Dantī and Citraka are similar in Rasa (Kaṭu), Vipāka (Kaṭu) and Vīrya (Uṣṇa) but the former is purgative in action while the latter is not.

On the side of body response, the drugs acting on specific tissue, organ, or disorder is said to have Prabhāva and the action is directed to disease and not towards Doṣas. For instance. cardiotonic action of Arjuna, Anthelmintic activity of Viḍaṅga, Antitoxic effect of Śirīṣa are said to be due to Prabhāva.

Thus two things contribute to the nature of Prabhāva :

1. Specificity of chemical composition.
2. Specificity of the site of action.

In early days, as chemistry was not developed, this could not be explained satisfactorily. There are other measures as god-worship, putting on stones, recitation of

Mantras, various charms which are said to work due to Prabhāva. Such actions also could not be known and as such Prabhāva is called as Acintya (inexplicable or empirical) in contrast to Vīrya which is cintya (explainable or rational). Vīrya is Cintya Śakti while Prabhāva is Acintya Śakti.

Action of Prabhāva :

The actions due to Prabhāva are of various types which may be grouped as follows :

1. Physical — Extraction of foreign body with magnet.
2. Pharmacological—Emetics, purgatives, vṛṣya etc.
3. Toxicological—Anti-poisonous.
4. Bactericidal and Vermicidal—Anthelmintic, Rakṣoghna etc.
5. Spiritual—Mantras, worship, stones, charms etc.

Suśruta and his followers have included these actions under Vīrya, though they have indicated their agreement to the concept of Prabhāva by the words like 'Amimānsya,' 'Acintya' and 'Anavadhāraṇīya'.

Basis of Prabhāva :

Prabhāva can be discussed on the basis of Bhautika composition of the drug. Drugs having similar composition of itself and its dependent properties act by virtue of Vīrya while those having difference in composition between itself and its properties act in a different way by its specific composition in respective of properties which are subverted. The former and the latter groups of Dravyas are known as Samāna-Pratyayārbdha (composed of similar Bhūtas) and vicitra-pratyayārbdha (composed of dissimilar Bhūtas) respectively. Some instances are given below :

1. Madhura-	Godhūma	Vātahara	S. P.
Guru	Yava	Vātakara	V. P.
2. "	Dugdha	Śītavīrya	S. P.
	Matsya	Uṣṇavīrya	V. P.
3. "	Pig	Madhura-Vipaka	S. P.
	Tiger	Kaṭu-Vipāka	V. P.
4. Kaṣāya	Dhātakī-	Sita Vīrya, Grāhī	S. P.
	puṣpa	(Astiringent)	
	Harītakī	Uṣṇavīrya,	V. P.
		Recana (Purgative)	
5. Amla	Āmalakī	Laxative	S. P.
	Dāḍima	Astringent	V. P.
6. Śītavīrya	Ghr̥ta	Appetiser	V. P.
7. Uṣṇavīrya	Vasā	Anti-appetiser.	V. P.
8. Kaṭuvipaka	Mudga	Pittaśāmaka	V. P.
9. Madhura-	Māṣa	Pittavardhaka	V. P.
Vipāka			

S. P. = Samāna-Pratyayārabdha.

V. P. = Vicitra-Pratyayārabdha.

CHAPTER VIII

MUTUAL RELATION OF PROPERTIES

There are some rules governing the mutual relation of properties of drugs which further decide their action. They are as follows :

Rule I—Generally Rasa, Vipāka and Vīrya of drugs will be as below :

<i>Rasa</i>	<i>Vipāka</i>	<i>Vīrya</i>	<i>Example</i>
1. Madhura	Madhura	Śīta	Madhuyaṣṭī
2. Amla	Amla	Uṣṇa	Amlikā
3. Lavaṇa	Madhura	Uṣṇa	Saindhava
4. Kaṭu	Kaṭu	Uṣṇa	Marica
5. Tikta	Kaṭu	Śīta	Nimba
6. Kaṣāya	Kaṭu	Śīta	Dhātakī

This is for Samāna-pratyayārabdha Dravyas. In Vicitra-Pratyayārabdha Dravyas there may be some variation as in Pippalī the Rasa is Kaṭu but the Vipāka becomes Madhura.

Rule II—Normally the strength of Rasa, Vipāka, Vīrya and Prabhāva is in progressive manner. Thus Rasa will be superceded by Vipāka, the same by Vīrya while Prabhāva supercedes all.

For instance, Madhura Vipāka in Pippalī supercedes Kaṭu Rasa and thereby exerts Vṛṣya action. In Bṛhat Pañcamūla, Uṣṇa Vīrya supercedes botha Rasa (Kaṣāya &

Tikta) and Vipāka (Kaṭu) and produces its action as Vātaśamana. Dantī acts as purgative which dominates all three Rasa (Kaṭu) Vipāka (Kaṭu) and Vīrya (Uṣṇa).

Rule III—In cases where the strength of these properties are proportionally dissimilar, the stronger one subdues the weaker ones and thereby exerts its action.

For instance, the flowers of Arka (red calotropis) exert their heamostatic action by virtue of the strongest Rasas (Madhura-Tikta) subduing Vipāka (Kaṭu) and Vīrya (Uṣṇa). The Vipāka (Madhura) of Śuṇṭhī being the strongest acts as Vṛṣya by subduing the adverse ones e.g. Rasa (Kaṭu) and Vīrya (Uṣṇa). In Hingu (Asafoetida), Vīrya (Uṣṇa) is the strongest which subdues Rasa (Kaṭu-Tikta) and Vipāka (Kaṭu) and thus acts as Vāta Śamana. Āmalaka acts as Tridoṣa śamana by prabhāva which is the strongerst one subduing Rasa (Amla), Vipāka (Madhura) and Vīrya (Śīta).

Rule IV—The weaker properties also are not completely devoid of action but all contribute more or less to the total effect of the drug. Thus the effect of a drug is the sum total of the actions of Rasa, Vipāka, Vīrya and Prabhāva.

For instance, Guḍuḥī is Kapha-Pittahara due to Rasa (Tikta), Vātahara due to Vīrya (Uṣṇa), Vṛṣya due to Vipāka (Madhura) and Anti-leprotic due to Prabhāva.

CHAPTER IX

KARMA

Definition :

Karma is that which causes Samyoga (Conjunction) and Vibhāga (disjunction) irrespective of any other factor and is located in Dravya. In the context of Pharmacology this relates to action on organs, Doṣas, Dhātūs and Malas which is required for homeostasis of the person. In other words, Karma is the response of the living tissue to Drvya.

Theory of Drug action :

The mode of action of drugs is based on the theory of Pañca Mahābhūta. As said above, the body is composed of five Mahābhūtas and similar is the composition of drugs. Drugs when used combine with the selective Mahābhūta and by altering its quantity and quality produce their action by further influencing the respective Doṣas, Dhātus and Malas accordingly. This is a sort of selective mechanism more or less like the Lock and Key theory based on structure-function relationship. As in the living body Pañca Mahābhūta is represented by Tridoṣa, there is a tradition of describing the action in terms of Doṣas instead of Mahābhūtas. The Bhautika state of drugs, on the other side, is indicated by Rasa.

For instance, if Madhura Rasa (Pārthivāpya) is administered, it would effect the Pārthiva and Āpya Bhūtas and

would thereby increase the Kapha Doṣā, Dhātus like Rasa, Māmsa, Medas, Majjā and Śukra and Malas like stool and urine which have predominance of Pṛthvī and Ap Dhātus. Reverse will be the effect on administration of Tikta Rasa.

Action may be localised or general (systemic). Rasas have mostly local effect and some general effect till digestion is completed. The Rasa, in the final form, circulates through Rasa dhātu all over the body and influences the Doṣas and metabolic processes. When it comes in contact with Doṣas which are in Dhātū form (maintaining the body) it increases or decreases them according to similar or dissimilar properties. On metabolic processes it may have anabolic effect if its Vipāka is Guru and Katabolic one if it is Laghu Vipāka. There is a third category of specific actions which are specific from the point of view of drug and body response towards it. Rasa, Guṇa and sometimes Vīrya have local action; Vipāka and Vīrya have systemic actions and Prabhāva has got specific action. External administration (Bahiḥparimārjana) of drugs are mostly directed towards local action while internal administration (Antaḥparimārjana) towards systemic action.

Action may also be grouped as direct or indirect. The pungent action of Kaṭu Rasa on tongue is direct while the increase in secretions from eye, mouth, nose etc. is due to reflex mechanism and is indirect. The action of purgative drugs is direct on intestinal contents and indirect on the flow of bile.

Classification of actions :

Drugs have been placed in a group on the basis of similar properties which are defined by observing action

of a large number of drugs in way of generalisation. Caraka has described fifty groups of drugs according to action each group containing ten drugs. He has further said that other new drugs may be included in those groups if similar properties are found in the same. For instance, Śīta, Snigdha, Madhura are main properties of the drugs in the Jīvaniya group and as such any new drug having these properties is entitled to join that group.

Broadly, Karmas may be divided in two groups Saṁśodhana (Purificatory) and Saṁśamana (Pacificatory). Vamana, Virecana, Āsthāpana, Anuāsana and Nasya are five purifactory measures known as Pañca Karma. The Saṁśamana karmas may again be grouped into six such as Snehana (Oleation), Rūkṣaṇa (Roughening), Brīhṇaṇa (Bulk-increasing), Laghana (Bulk-decreasing), Swedana (heating) and Stambhana (cooling).

There is a large number of actions mentioned in Āyurvedic texts. However, some of the important actions are enumerated here systemwise :

Nervous system :

Example

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|--|-------------|
| 1. Medhya (intellect-promoting
and useful in mental disorders.) | Śaṅkhapuṣpī |
| 2. Madakārī (Narcotic) | Opium |
| 3. Saṁjñā-sthāpana (Resuscitative) | Vacā |
| 4. Nidrā-janana (Hypnotic) | Sarpagandhā |
| 5. Vedanā-sthāpana (Analgesic) | Guggulu. |

Sense-organs :

- | | |
|----------------------------------|------------|
| 1. Cakṣuṣya (vision-promoting) | Triphalā |
| 2. Nasya (errhines) | kaṭphala |
| 3. Swedana (Diaphoretic) | Vatsanābha |

4. Snehana (Oleation)	Fat
5. Rūkṣaṇa (Roughening, Antilipid)	Yava
6. Varṇya (Complexion-promoting)	Sārivā
7. Kandūghna (Antipuritic)	Nimba
8. Kuṣṭhaghna (useful in skin disease, Antileprotic)	Khadira
9. Udarda-praśamana (useful in urticaria, anti-allergic)	Tinduka
10. Roma-sañjanana (Hair-promoting)	Elephant teeth.
11. Roma-śātana (Depilatories)	Orpiment.

Circulatory system :

1. Hṛdya (Cordials)	Arjuna
2. Śothahara (useful in swellings, Anti-inflammatory)	Daśamūla

Respiratory system :

1. Kāśahara (Bronchial sedatives, Anti-tussive)	Drākṣā
2. Śwāsahara (Anti-dyspnic)	Śaṭī
3. Chedana (Expectorant)	Yavakṣāra
4. Hikkā-nigrahaṇa (Anti-hiccough)	Mayurapiccha
5. Kaṇṭhya (beneficial for throat)	Malayavacā

Digestive system :

1. Āśyasravaṇa (Sialogogue)	Tumburu
2. Tṛṣṇā-nigrahaṇa (Antidyspic)	Hṛibera
3. Tṛptighna (Anti-Saturation)	Ārdraka
4. Rocana (Flavouring)	Citrus fruits
5. Dīpana (Appetiser)	Hingu
6. Pācana (Digestive)	Citraka
7. Agnisādana (Anti-appetiser)	Apāmārga-bīja

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|--|--------------|
| 8. Vidāhī (gastric irritants) | Red Pepper |
| 9. Viṣṭambhī (Anti-carminative) | Jack fruit |
| 10. Anulomana (Carminative) | Yavāni |
| 11. Vamana (Emetic) | Madana Phala |
| 12. Chardi-nigrahaṇa (Anti-emetic) | Elā |
| 13. Recana (Purgative) | Trivṛt |
| 14. Puriṣa-saṅgrahaṇiya (Astringent) | Kuṭaja |
| 15. Puriṣa-virajāniya (Faecal
depigmenter) | Jambū |
| 16. Śūla-praśamana (Intestinal anti-
spasmodic) | Śuṇṭhī |
| 17. Āsthāpana (Corrective enemata) | Pātalā |
| 18. Anuvāsana (Unctuous enemata) | Taila |
| 19. Krimighna (Anthelmintic) | Vidānga |

Reproductive system :

- | | |
|---|------------|
| 1. Prajā-sthāpana (Anti-abortionifacient) | Dūrvā |
| 2. Ārtava-janana (Emmenagogue) | Kumārī |
| 3. Stanya-janana (galactagogue) | Śatāvārī |
| 4. Stanya-śodhana (galacto-depurent) | Devadāru |
| 5. Vājīkaraṇa (Aphrodisiac) | Kapikacchū |
| 6. Śukra-śodhana (Semen-depurant) | Kuṣṭha |

Urinary system :

- | | |
|--|----------------|
| 1. Mūtra-virecāniya (Diuretic) | Tṛṇa Pañcamūla |
| 2. Mūtra-virajāniya (urinary
depigmenter) | Lotus flower |
| 3. Mūtra-saṅgrahaṇiya (Anti-diuretic) | Udumbara |
| 4. Aśmarī-bhedana (lithontriptic) | Kulattha |
| 5. Mūtra-viśodhana (Urinary
antiseptic) | Kakkola |

General metabolism (Sārvadhātuka karma) :

- | | |
|------------------------------|-------------|
| 1. Jwaraghna (Antipyretic) | Kirātatikta |
|------------------------------|-------------|

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|--|------------------|
| 2. Dāha-praśamana (Refrigerant) | Candana |
| 3. Śīta-praśamana (Calefacient) | Aguru |
| 4. Jivanīya (Vitaliser) | Aṣṭavarga |
| 5. Balya (Tonic) | Balā |
| 6. Sandhānīya (Healing) | Madhuyasṭi |
| 7. Rasāyana (Rejuvenative) | Āmalakī |
| 8. Viśaghna (Anti-poisonous) | Śīriṣa |
| 9. Br̥mhaṇa (bulk-promoting) | Māmsa |
| 10. Laṅghana (bulk-reducing) | Yava |
| 11. Śramahara (Energy-compensator, Alcohol Acopic) | |
| 12. Aṅgamarda-praśamana (Anti-bodyache) | Laghu Pañcamula. |

Specific Dhātus :

- | | |
|---------------------------------------|------------|
| 1. Śoṇita-sthāpana (Haemostatic) | Nāgakeśara |
| 2. Rakta-prasādana (Blood-purifier) | Mañjiṣṭhā |
| 3. Medohara (Anti-lipid) | Guggulu |

Specific Doṣas :

- | | |
|-------------------------------------|---------|
| 1. Vāta-śamana (Vāta-Pacifying) | Rāsnā |
| 2. Vāta-kopana (Vāta-vitiating) | Kalāya |
| 3. Pitta-śamana (Pitta-pacifying) | Uśira |
| 4. Pitta-kopana (Pitta-vitiating) | Sarṣapa |
| 5. Kapha-śamana (Kapha-pacifying) | Trikaṭu |
| 6. Kapha-kopana (Kapha-vitiating) | Sugar |

Śrotas :

- | | |
|---------------------------------------|--------|
| 1. Pramāthī (Channel-clearing) | Marica |
| 2. Abhiṣyandī (Channel-obstructing) | Curd |

Certain substances and drugs have been mentioned as the best ones for a specific action or a group of actions. They are as follows :

<i>Drug or substance</i>	<i>Action</i>
1. Alcohol	Energy-sparer
2. Milk	Vitaliser
3. Meat	Bulk-promoting
4. Salt	Flavouring
5. Acid fruits	Cordials
6. Honey	Kapha-Pitta-Praśamana
7. Ghee	Vāta-Pitta-Praśamana
8. Oil	Vāta-Kapha-Praśamana
9. Emetics	Kapha-hara (Expectorant)
10. Purgatives	Pittahara (cholagogue)
11. Enemata	Vātahara
12. Alkali	Depressing sexual potency.
13. Goat Milk	Useful in wasting, diarrhoea and Internal haemorrhage.
14. Sugar cane	Diuretic
15. Barley	Increasing faecal bulk.
16. Kulattha	Causing Acid gastritis
17. Māṣa	Increasing Kapha-Pitta.
18. Madanaphala	Emetics and enemata.
19. Trivṛt	Simple purgative.
20. Āragwadha	Laxative.
21. Snuhī-kṣīra	Drastic purgative.
22. Apāmārga	Śirovirecana (Errhines).
23. Viḍanga	Anthelmintic
24. Śirīṣa	Anti-poisonous
25. Khadira	Anti-leprotic
26. Rāsnā	Vāta-Śamana
27. Āmalaka	Gerontologic
28. Haritākī	Channel-cleaning
29. Eraṇḍamūla	Vṛṣya and Vātaśamana
30. Pippalimūla	Appetiser, digestive, carminative

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31. Citraka (roots) Appetiser, digestive, useful in anal pain and swelling, piles.
32. Puṣkarmūla In hiccough, dyspnoea, cough and chest pain.
33. Musta Astringent, appetiser and digestive
34. Hribera Cooling, appetiser, digestive, anti-emetic, astringent.
35. Aralu Astringent, appetiser and digestive.
36. Dūrvā Astringent, appetiser, haemostatic.
37. Guḍūci Astringent, vātaśamana, appetiser, useful in constipation and disorders of Kapha and Rakta.
38. Bilwa Astringent, appetiser, vata-kapha-śamana.
39. Ativiṣā Appetiser, digestive, astringent, tridoṣa-hara.
40. Kamala-Parāga Astringent, haemostatic.
41. Durālabhā Pitta-kapha-Śamana.
42. Gandha -
Priyaṅgu Haemostatic.
43. Kuṭaja (Bark) Kapha-Pitta-Rakta-Śamana, astringent-absorbent, checks mucus, bile & blood (in stool)
44. Kāśmarya(Fruit) Haemostatic.
45. Prṣniparṇī Astringent, vātahara, appetiser and aphrodisiac.
46. Śalaparṇī Aphrodisiac, Tridoṣa-hara.
47. Balā Astringent, tonic, Vāta-hara.
48. Gokṣura Tonic, removes vāta and dysuria.
49. Hiṅgu Expectorant, appetiser, breaking, carminative, vāta-kapha-hara.

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|------------------------------|---|
| 50. Amlavetasa | Breaking, appetiser, carminative,
Vāṭa-kapha-hara. |
| 51. Yavakṣāra | Digestive, purgative, useful in piles. |
| 52. Butter milk
(Takra) | In Dysentery, oedema, piles and
disorders due to excess of fat. |
| 53. Candana and
Udumbara | Cooling paste. |
| 54. Rāsnā and
Aguru | Heating paste. |
| 55. Lāmajjaka and
Uśīra | As paste in burning sensation, skin
diseases and excessive sweating, |
| 56. Kuṣṭha | In Vātahara massage and
fomentation. |
| 57. Madhuyasṭi. | Useful For eyes, semen, hairs, throat,
complexion, strength; depigmenting,
healing. |

Vāgbhata I (Aṣṭāṅgasaṅgraha, SU. 13) has added the following to the above list :

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|--|---|
| 58. Vāsā | For internal haemorrhage. |
| 59. Kaṇṭakārī | Anti-tussive. |
| 60. Lākṣā | For fresh wounds. |
| 61. Nāgabālā | For wasting and haemoptisis. |
| 62. Bhallātaka and
Citraka (Root) | For dry piles. |
| 63. Kuṭaja | For bleeding piles. |
| 64. Lājā | Anti-emetic. |
| 65. Haridrā | Anti-diabetic. |
| 66. Castor oil | For Hernia, Intestinal colic and
gaseous tumour. |
| 67. Laṣuna (Garlic) | Gaseous tumour and Vāta. |
| 68. Iron | For Anaemia. |

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|--------------------------|------------------------|
| 69. Guggulu | For Medas and Vāta. |
| 70. Triphalā | For defects of Vision. |
| 71. Triphalā-
guggulu | For Ulcers. |
- Vagbhata II has added the following :
- | | |
|-----------------------------------|-----------------------------------|
| 72. Musta and
Parpaṭa | for fever. |
| 73. Silājatu | for urinary disorders. |
| 74. Āmalakī and
Haridrā | for Diabetes. |
| 75. Pippalī | for spleen enlargement. |
| 76. Rasāñjana | for obesity. |
| 77. Guḍuḥ | for Neuritis and nervous leprosy. |
| 78. Brāhmī | for Apasmāra (Epilepsy) |
| 79. Old ghee | for Insanity. |
| 80. Jīṅgiṇi latex
(by Nasya) | for pain in shoulder and arms. |

Vāgbhata I (A. S. Su. 7. 210-263) has demonstrated a large number of peculiar actions with the help of concrete instances which emerge in different circumstances. The difference in action of such drugs though result of observation is an interesting topic for further study and research. For instance, Dadhi (curd) causes oedema but Takra (Butter-milk) even with fat removes it. Similary, ghee though more snigdha is not so beneficial in Ardita (Facial paralysis) as Navanīta (fresh butter). All these situations are challenge to the intellect and reason of the physician.

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SECTION II
PHARMACY AND ADMINISTRATION
OF DRUGS.

SECTION II
PHARMACY AND ADMINISTRATION
OF DRUGS

CHAPTER I

NĀMA-RŪPA-JÑĀNA

Identification of drugs :

In ancient times, as there was intimate contact with nature, identification of drugs posed no problem. Drugs were commonly known; search about their properties and uses was the main objective. Hence it is said that those who want to identify plants should contact the persons intimately connected with forests such as shepherds, ascetics, hilly tribesmen etc.

Morphological description of plants is also not found in texts because of the above reason. However, prominent characters of the plants have been mentioned by way of synonyms. There is a class of Nighantus which describe the drugs by synonyms only.

Synonyms have been framed according to :

1. Morphological characters—such as Śatamūli, Saptaparna, Trikaṇṭaka etc.
2. Simile—as Kākajaṅghā, Halinī, Śaṅkhaṣpī etc.
3. Place of origin or supply—Māgadhi (Pippali), Drāviḍi (Elā), Bāhlika (Hingu).
4. Time—Śāradi (Jasmine), Varṣābhū (Punarnavā).
5. Property—Pitā (Haridrā), Vājigandhā, Tiktā, Ūṣaṇa.
6. Action and therapeutic uses—Dadrughna (Cakramarda), Arṣoghna (Sūraṇa) etc.
7. General use—Yajñiya (Khadira), Agnimantha.

8. Tradition—Guggulu, Kuṭannata etc.

9. Historical importance—Bodhi-druma (Aśwattha).

Inspite of this, gradual increase in number of synonyms created great confusion particularly when one word is used as homonym for several words. For instance, the word 'Kramuka' is used for three different drugs—Pūga, Lodhra and Tūda. In such cases physician has to take decision according to the context but on many occasions the attempt proves futile.

Local and regional names particularly current in tribal areas are important which provide clue for the original Samskrit word and thereby help in identification of Plants¹. Though not correct in all cases, linguistic peculiarity of the local name may be helpful in some cases but besides this other points such as actions and uses will also have to be kept in consideration.

Collection of drug :

In this context, place and time are two important facts to be considered which influence the efficacy of the drug.

Place (Deśa)—Place has been divided into three :

1. Ānūpa (Aquatic or Humid.)

2. Jāngala (Arid or Hilly.)

3. Sādhāraṇa (Medium.)

Besides this, Soil, in which the plant grows, has been divided in five groups according to Pañca Mahābhūtas :

1. Pārthiva — Stony, hard, black, with stout trees and grasses.

¹ Prof. Balwant Singh has cleared up controversy about several drugs on this basis. See—Glossary of Vegetable drugs in Br̥hat-trayī (Chowkhamba, Varanasi, 1972).

2. Āpya — Smooth, śīta, in neighbourhood of water, whitish, with smooth cereals, grasses & soft plants.
3. Āgneya — of mixed colour, with small gravels, having a few pale trees and grasses.
4. Vāyavya — Rough, ashy or grey, with cavities, having less watery plants.
5. Ākāśīya — Light blue, soft, irregular, with cavities and tasteless water, having trees with feeble heartwood and big mountains full of vegetation.

Implication of types of soil is important in collection of drugs because a drug used for a particular action will be more efficacious if taken from the soil having favourable Bhautika composition. For instance, Purgative drugs should be taken from the soil having predominance of Pṛthvī and Jala. Similarly, Emetics will be more potent if grown in the soil having Agni and Ākāśa.

Description of the ideal land for collection of drugs has also been given (S. Su. 37; C. Ka. 1). Such land should be even, free from big cavities, stones and anthills; far from cremation ground, temples and sandy places; devoid of alkali; hardly brittle, smooth, soft, stable, black or white or red; with grasses, unploughed, unobstructed by big trees and having irrigational facilities.

Time :

Caraka has suggested different seasons for collection of different parts of the plant :

1. Branches — Rainy season, spring
2. Leaves — " "

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|---------------|---|---------------------------------------|
| 3. Root | — | Summer or late winter |
| 4. Bark | } | — Autumn |
| 5. Tuber | | |
| 6. Latex | | |
| 7. Heart-wood | — | Early winter. |
| 8. Flower | } | — In seasons when they are available. |
| 9. Fruit | | |

Some scholars say that root, leaves, bark, latex, heartwood and fruit should be collected in Prāvṛṭ (early rains), Varṣā (Rainy season), Śarad (Autumn), Hemanta (early Winter), Grīṣma (summer) respectively. Rāja-nighaṇṭu says—Tuber, root, flowers, leaves and the whole plant should be taken in Hemanta, Śīśira, Vasanta, Grīṣma and Śarad respectively. Śārṅgadhara advises to collect all plants afresh in Śarad except emetics and purgatives which should be taken at the end of Vasanta. Most of the plants are to be collected in Puṣya, Aświni or Mṛgaśira Nakṣatras.

Suśruta, according to the concept of Agniṣomiya, suggests that Sumya (Śītavīrya) and Āgneya (Uṣṇavīrya) dravyas should be collected in Saumya (Varṣā, Śarad, Hemanta) and Āgneya seasons (Śīśira, Vasanta, Grīṣma) respectively. He further says that the Saumya drugs, if collected from Saumya soil and in Saumya season, will be more Madhura, Snigdha and Śīta in properties. Śārṅgadhara, following this, says that the plants growing in Vindhya and Himalayan region are Āgneya and Saumya in nature respectively.

The drug itself should be in ideal condition. It should be fresh, not affected by insects, poison, sharp instrument, sun, air, fire and water; free from dirt, having large,

strong, deep and mature root, fully mature with normal Rasa, colour, smell, characters and grown in favourable season. Such drug should be used in treatment.

Collection of animal products :

Blood, hairs, nails etc. should be collected from the animals in adult stage and milk, urine and stool should be taken after their food is completely digested.

Storage :

After the drug is collected, it should be kept in good covered containers on sufficient height so that it may not be contaminated with fire, water, humidity, smoke, dust, mouse and other animal. It should be equally suitable for all the seasons. Store-room should be well ventilated but free from winds, having doors in the east and the north. It should be fumigated and sprayed daily. There should be cloth-bags, earthen pots, wooden racks and long nails to keep the drugs.

Period of expiry :

All raw drugs have been suggested to be used in fresh state except Ghṛta, Guḍa, Honey, Dhānyaka, Pippalī, and Viḍaṅga. Usually the drugs retain their potency till one year after which they lose their efficacy.

Regarding Medicinal preparations, the period of Potency has been given as follows :

1. Powders—2 months
2. Pills and Avalehas—One year.
3. Ghṛta and Taila—4 months.

Asavas (Fermented beverages). Metals and Mercurial preparations improve their potency as time passes on.

CHAPTER II

PHARMACEUTICAL PROCESSING AND PREPARATIONS

The raw drug has to be purified and transformed into a useful and agreeable form so that it can be used as a medicine.

Śodhana (Purification) is the first process, which is applied for removal of Physical and chemical impurities of the drug. It also lessens or eliminates the toxic effect of such drugs as in case of Aconite, Bhallataka etc. Particularly for minerals and poisons it is a must.

Rasaśālā (Pharmacy) alongwith its equipments has been described in detail in Rasaratna Samuccaya (Ch. 7).

The Pharmaceutical preparations may be divided broadly in four groups :

A. Kaṣāya :

Literally it means extract. Five forms of Kaṣāya are well known :

1. Swarasa (Expressed juice)
2. Kalka (Paste or powder)
3. Kwātha (decoctions)
4. Hima (cold infusion)
5. Phāṇṭa (Infusion).

Swarasa is a heavy preparation. Haviness decreases gradually downwards so that the Phāṇṭa comes as the lightest. From the point of potency, Swarasa is the most

potent preparation. Hence, out of the five, the form should be selected according to general condition and digestive power of the patient as well as the severity of disease. If the patient is strong, his digestion is good and disease is acute heavy preparations should be selected otherwise light ones.

B. *Fatty Preparations :*

The drugs are processed and cooked with Ghee or Taila according to prescribed method. Evidently fat-soluble fraction comes out with Ghee or Tail just as water-soluble fraction is extracted in kaṣaya.

C. *Fermented Preparations :*

Āsava and Ariṣṭa are common preparations in this group. Āsava is that where drugs mixed with water is kept for a certain period for fermentation. When decoction of drug is used for this it is called as 'Āriṣṭa'. Drakṣāsava and Drakṣāriṣṭa are well known preparations of this group.

D. *Other Preparations :*

1. Awaleha (Confection).
2. Gutikā (Pills).
3. Pānaka or Śārkara (syrups).
4. Kṣāra (Alkali).
5. Sattwa (Extract).

The potency of a compound formulation may be modified by adding or subtracting some ingredient or by necessary modification in time, processing and administration.

There are several dietetic preparations which are prescribed for patients according to ailment. Some of the important preparations are as below :

1. Yūṣa (Soup)
2. Yavāgū (Gruel)
3. Maṇḍa (Boiled cereal-water)
4. Māmsa-rasa (Meat soup)
5. Takra (Butter milk)

MĀNA (Measures)

Māna is of three types :

1. Pautava Māna (Measures of weight)
2. Druvaya Māna (measures of volume)
3. Pāyya māna (measures of length)

Pautava Māna :

It is of two types : 1. Māgadha 2. Kāliṅga. The former was prevalent in Magadha Deśa and the latter in Kāliṅga Deśa. Māgadha Māna has been regarded as superior to Kāliṅga Māna. Probably it may be due to political reason when Kalinga was subdued by Magadha (in the empire of Asoka).

Māgadha Māna is popular which is as follows :

30 Paramānu	=	Varṁśī
6 Varṁśī	=	Marīci
6 Marīci	=	Rājikā
3 Rājikā	=	Sarṣapa
8 Sarṣapa	=	Yava
4 Yava	=	Ratti (Guṇjā)
6 Ratti	=	Māṣa
4 Māṣa	=	Śāṇa
2 Śāṇa	=	Kola
2 Kola	=	Karṣa
2 Karṣa	=	Śukti
2 Śukti	=	Pala

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2 Pala	= Prasṛta
2 Prasṛta	= Kuḍava
2 Kuḍava	= Mānikā
2 Mānikā	= Prastha
4 Prastha	= Ādhaka
4 Ādhaka	= Droṇa
2 Droṇa	= Śūrpa
2 Śūrpa	= Droṇī
4 Droṇī	= Khārī
100 Pala	= Tulā
2000 Pala	= Bhāra

For easy reference, it may be noted that Māṣa, Śāṇa, Karṣa, Pala, Kuḍava, Prastha, Ādhaka, Droṇa, Droṇī and Khārī are four times in progressive manner. Such as Śāṇa is four times of Māṣa and so on.

Comparing with the Metric system, Māṣa, kola and Karṣa are approximately 1 gm; 5 gm. and 10 gm. respectively. one Ratti is 125 Mg.

Kālinga Māna is as follows :

12 Gaura sarṣapa	= Yāva
2 Yava	= Guñjā
3 Guñjā	= Valla
8 Guñjā	= Māṣa
4 Māṣa	= Śāṇa
6 Māṣa	= Gadyāṇa
10 Māṣa	= Karṣa
4 Karṣa	= Pala
4 Pala	= Kuḍava.

The rest is as in Māgadha Māna.

Druvaya Māna :

Vagbhata (A. H. SU. 20) has described this unit of

measure. It is Bindu which is a drop fallen from the index finger after its portion upto two nodes is dipped in the fluid. Rest is as follows :

8 Bindu	=	Śāṇa
32 Bindu	=	Śukti
64 Bindu	=	Pāṇi śukti

This is in relation to Nasal drops etc. but for other practical purposes Kuḍava or Añjali is the standard unit which is the measure of fluid contained in a container of 4 cubic Aṅgula. Caraka has used the Añjali Pramāna in relation to such measurement. Kuḍava comes to about 160ml.

Pāyya Māna :

The unit of the measure of length is Aṅgula, which is equal to the length of 8 Yava grains pierced together by a needle. This comes to about $\frac{3}{4}$ inch. Rest is as follows :

12 Aṅgula	=	Vitasti
21 Aṅgula	=	Aratni
2 Vitasti	=	Haṣṭa
4 Haṣṭa	=	Vyāma

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CHAPTER III ADMINISTRATION OF DRUGS

Ideal drug :

The drug is used for prevention and cure of diseases. Ideal drug should have four qualities :

1. *Availability* : The drug should be easily available in large quantity, if necessary, and cheap so that it may be within reach of the common man.
2. *Efficacy* : The drug should have efficacy adequate enough to eradicate the disease and at the same time it should not produce undesirable side effect.
3. *Pharmaceutical forms* : It should be such as to be transformed in various pharmaceutical preparations so that it may be used according to the need and convenience of the patient.
4. *Potency* : It should be perfect with all its properties. Rasa, Vīrya, Guṇa etc. So that it may be potent enough to produce desired pharmacological actions.

Virodha (Incompatibility) :

When two or more drugs are combined, incompatibility is the most important point to be kept in mind. Caraka has described it in detail though in context of diet such as incompatibility in relation to Deśa (place), Kāla (time), Agni (digestion), Mātrā (Dose), Sātmya (Suitability), Doṣa,

Saṁskāra (Processing), Vīrya, Koṣṭha (response to purgation), Awasthā (condition), Krama (Order), Parihāra (Avoidance), Upacāra (Prescription), Pāka (Cooking), Saṁyoga (Combination), Hṛd (flavour), Sampat (potency) and Vidhi (rules). Though Vāgbhaṭa I recognised the incompatibility of drug he did not put proper emphasis on it. For practical purposes, in relation to drugs, the following classification may be useful :

1. *Māna-virodha* (Quantitative incompatibility)—Honey and ghee in equal quantity are harmful.
2. *Guṇa-virodha* (physical & chemical incompatibility)—Combination of two or more drugs having opposite Guṇas (Rasas, Vipākas, Vīryas etc.). Such as combination of salt and milk (Rasa-virodha), fish and milk (Vīrya-virodha), radish and milk (Vipāka-virodha).
3. *Karma-virodha* (Pharmacological Incompatibility or Antagonism)—Such as Dhātaki (Astringent) and Danti (Purgative). Where the combination potentiates action it is called Sahakārya (Synergism) Such as Punarnavā and Maṇḍūra.

Dosage or Posology :

Consideration of dose is very important to achieve the desired result because if the dose is too large it may cause harmful side effects and if it is too small it would not be effective. Hence the dose may be so regulated that the drug may produce the desired effect but may not harm the tissues. It should be decided according to the condition of disease and the patient.

Although there can't be any hard and fast rule about dosage which may vary according to Doṣa, Agni, Bala,

Vaya, Vyādhi, Dravya, and Koṣṭha, Śārṅgadhara has suggested dosage according to age and preparations. According to him for one month old child the dose should be one Ratti (125 mg.) which is to be given in the form of confection with milk, honey, sugar and ghee. The dose is to be increased at the rate of one Ratti per month upto one year. Thereafter the increase should be one Māṣa (1 gm.) per year up to the age of sixteen years. This should be maintained up to the age of seventy, then decreased gradually in regressive manner. This is for powders as well as pastes but in case of decoction it should be four times.

According to preparation, the dose has been suggested as follows :

- | | | |
|------------------|---|-----------------------------|
| 1. Swarasa | — | $\frac{1}{2}$ Pala (20 ml.) |
| 2. Kalka | — | 1 karṣa (10 gms.) |
| 3. Cūrṇa | — | 1 Karṣa ¹ |
| 4. Kwātha | — | 1 Pala (40 ml.) |
| 5. Phāṇṭa | — | 2 Palas (80 ml.) |
| 6. Ghṛta | — | 1 Karṣa |
| 7. Taila | — | 1 Karṣa |
| 8. Hima | — | 1 pala (40 ml.) |
| 9. Awaleha | — | 1 Karṣa |
| 10. Āsava-Ariṣṭa | — | 2 Karṣa (20 ml.) |
| 11. Guṭikā | — | 1 Karṣa Per day. |
| 12. Rasausadhas | — | 1-2 Ratti |

In Kalpas of single drugs particular for Rsayana use, A specific dosage is prescribed in which at first the dose is increased in gradual progressive manner and

¹ Now-a-days given $\frac{1}{2}$ karṣa.

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then decreased in the same but regressive manner. The dosage of Bhāllataka Rasayana has been fixed in this way (Fig. 3-6).

DOSES OF SEMECARPUS ANACARDIUM (ACCORDING TO CHARAKA)

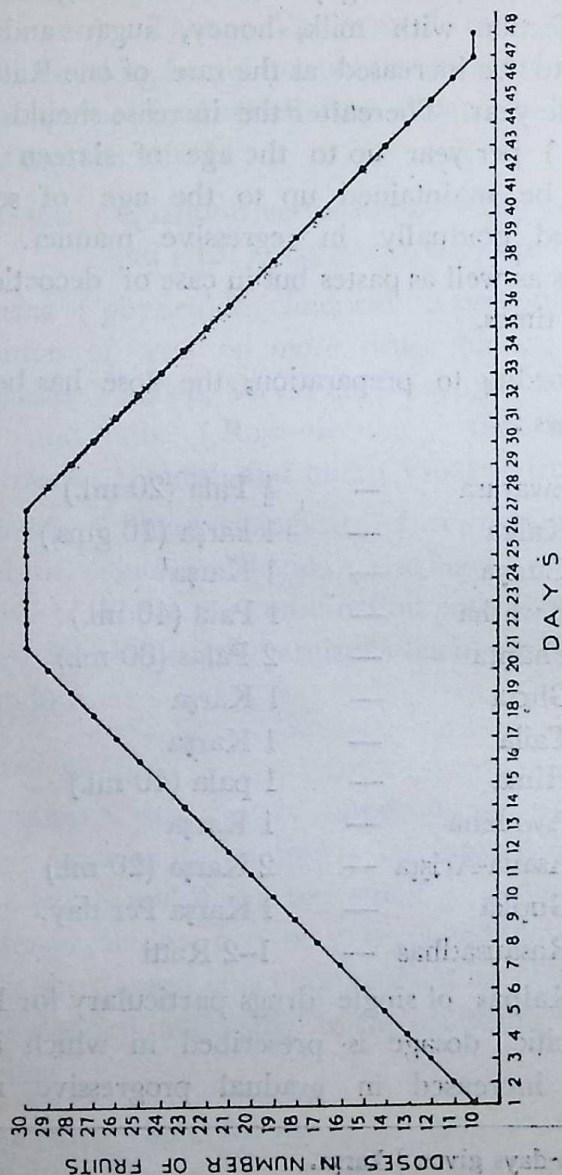


Fig. 3

DOSES OF SEMECARPUS ANACARDIUM

(ACCORDING TO ASHTANGA SANGRAHA)

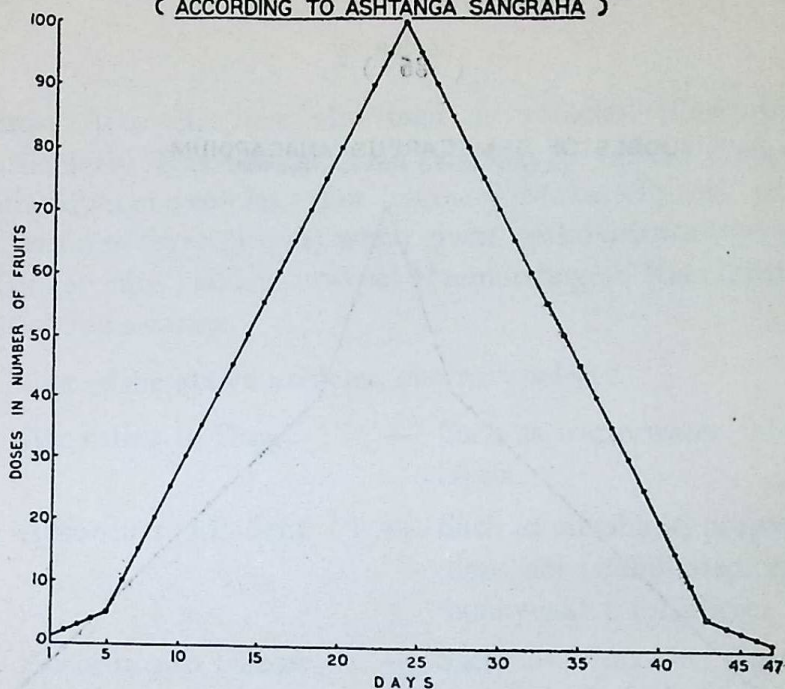


Fig. 4

DOSES OF SEMECARPUS ANACARDIUM

(ACCORDING TO SUSHRUTA)

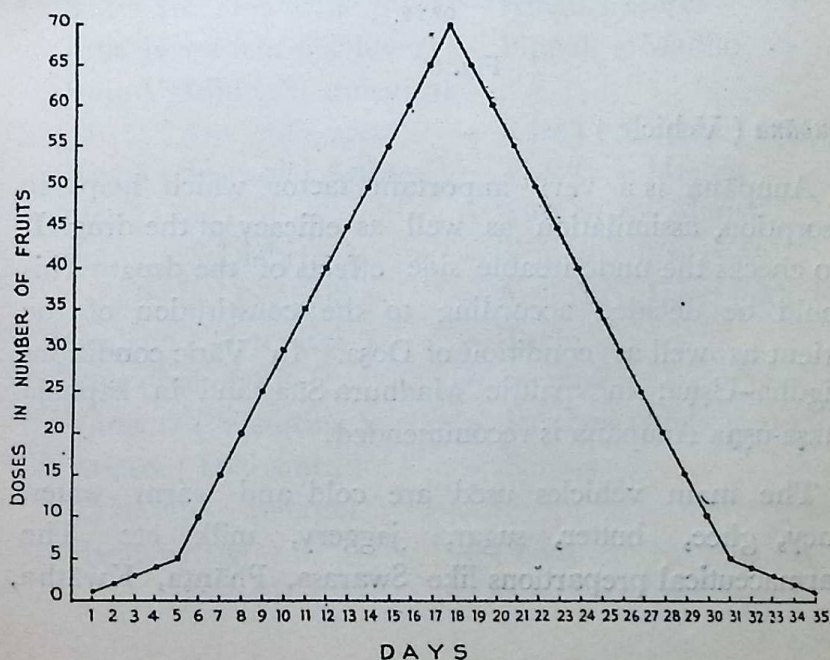


Fig. 5

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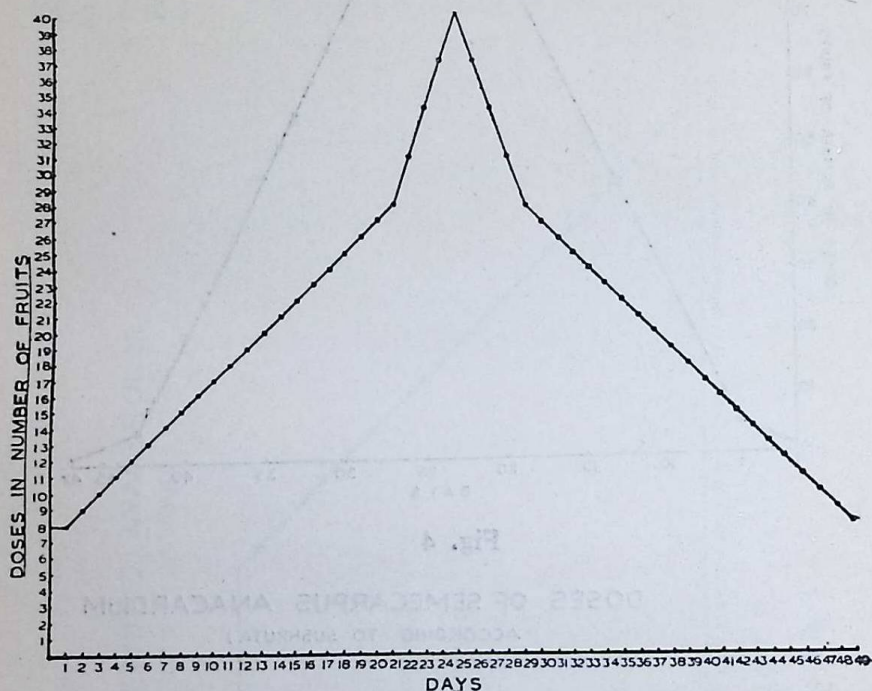
DOSES OF SEMECARPUS ANACARDIUM
(ACCORDING TO ASTANGA HRIDAYA)

Fig. 6

Anupāna (Vehicle) :

Anupāna is a very important factor which helps in absorption, assimilation as well as efficacy of the drug. It also checks the undesirable side effects of the drug. This should be decided according to the constitution of the patient as well as condition of Doṣa. In Vātic conditions Snigdha-Uṣṇa; in paittic Madhura-Śīta and in kaphaja Rūkṣa-uṣṇa *Anupāna* is recommended.

The main vehicles used are cold and warm water, honey, ghee, butter, sugar, jaggery, milk etc. The pharmaceutical preparations like Swarasa, Phāṇṭa, Kwātha,

Hima, Arka etc. are also used as vehicles. One drug particularly Rasauṣadha, may be used in various diseases with different vehicles. For instance, Makaradhwaja may be useful in fever (jwara) when given with Ārdraka-swarasa (Ginger juice) and in internal Haemorrhages (Raktapitta) with Vāsā swarasa.

Out of the above vehicles, one may select :

1. According to Drug — Such as warm water after Ghṛta.
2. According to Patient — Such as alcoholic preparations for debilitated and honey-water for obese.
3. According to Disease — Such as milk in Raktapita, Ārdraka in Jwara.

Vāgbhaṭa II (A. H. UT.) has given a long list of vehicles according to diseases, such as :

- | | |
|---------------------------------------|-------------------------|
| Śūla (Intestinal colic) | - Hingu + Ghṛta |
| Jīrṇa Jwara (chronic fever) | - Pippalī + Madhu |
| Vāta-Vyādhi (Neurological diseases) | - Rāsnā + Ghṛta |
| Śwāsa (Bronchial Asthma) | - Trikaṭu + Madhu |
| Śīta (Cold) | - Tāmbūla + Marica |
| Prameha (Diabetes) | - Triphalā + Śilājatu |
| Sannipāta (Typhoid) | - Ārdraka Juice + Madhu |
| Grahaṇī (Dysentery) | - Takra |
| Viṣa (poison) | - Swarṇa |
| Vamana (Vomiting) | - Parched paddy grain |
| Atisāra (Diarrhoea) | - Kuṭaja |
| Raktapitta (Internal Haemorrhage) | - Vāsā |

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Arśa (piles)	- Citraka
Krimi (Worm)	- Viḍāṅga
Ajirṇa (Indigestion)	- Warm water
Kṣaya (Wasting)	- Meat soup, Milk
Pāṇḍu (Anemia)	- Punarnavā
Kāsa (Cough)	- Vāsā

The drugs and substances mentioned in Agrya-Prakaraṇa (SU. 25) of caraka may also be used as Anupāna.

Bhaiṣajya-Kāla (Time of Administration) :

The following times have been prescribed for administration of drugs :

1. *Abhakta* (on empty stomach) :

The drug exerts strongest action if given on empty stomach hence this should be prescribed for strong persons and in disorders due to aggravation of kapha.

2. *Prāgbhakta* (before meal) :

This is useful in diseases due to Apāna Vāyu and also for toning up the intestinal muscles and for reducing fat.

3. *Madhyabhakta* (during meal) :

This is prescribed in diseases due to Samāna Vāyu and gastrointestinal disturbances particularly paittika ones.

4. *Adhobhakta* (After meals) :

After lunch the drug should be given in diseases of Vyāna Vāyu and after dinner in those of Udāna Vāyu. This strengthens the upper part of the body, is used in its disorders particularly Kaphaja ones and also for Br̥mhaṇa.

5. *Samabhakta* (Mixed with food) :

This is prescribed in children, delicate persons and

those having aversion to medicines, Anorexia and in diseases spread all over the body.

6. *Antarābhakta* (Between meals in day) :

The drug is taken in afternoon after the midday meal is digested and sufficiently before the evening meal. This is used in persons having good digestion and in disorders due to Vyāna Vāyu.

The same is applicable in relation to meal in night.

7. *Sāmudga* (Before as well as after meals) :

Pācana, Awaleha, Gūrṇa etc. are used alongwith light meal in hiccough, trembling, convulsions, disorders of thigh, upper and lower parts of the body.

8. *Muhuḥ Muhuḥ* (Off and on) :

It does not matter whether the patient has taken meal or is empty stomach, the drug is to be given off and on as in cases of dyspnosa, cough, hiccough, thirst, vomiting and poisoning.

9. *Sagrāsa* (with first morsel) :

The medicine is mixed with the first morsel of meal and is taken as such. Cūrṇa, Vaṭikā, Leha etc. are used in this way for the purpose of dīpana and Vājikaraṇa. Hingwaṣṭaka Cūrṇa is well known example of this. This is useful in disorders of Prāṇa Vāyu.

10. *Grāsāntara* (Between morsels) :

This is useful in disorders of Prāṇa Vāyu, particularly in heart disease.

11. *Niṣā* (In the night at bed-time) :

This is useful in disease of head, mouth, eye, ear, nose and throat. Vamana and Dhūma are used in this way.

Śāringadhara has made it concise in five including all the subdivisions in the same :

1. Morning
2. Midday meal
3. Night meal
4. Off and on
5. Bed-time.

Bhaiṣajya-Mārga (Channels of administration) :

Drug is administered through the channels of skin, mouth, eye, ear, nose, anus, urethra and vagina. The channel is selected according to the location of Doṣa.

1. Mouth—This route is selected for :

I. Local action—Gaṇḍūṣa (gargles), Pratisāraṇa (Paints)

II. Action on Gastrointestinal tract—Dīpana, Pācana, Vamana, Virecana etc.

III. Action on Respiratory system—Dhūmapāna.

IV. General action—Generally the drugs are given by oral route. Thus they are digested, absorbed and circulated all over the body and exert desirable action.

2. Nose—By this route drugs are given for the following purposes :

I. Local action—Nasya

II. Action on Respiratory system—Fumigations

III. Action on Head—Śirovirecana

3. Eye—Seka, Āścyotana, Piṇḍi, Biḍāla, Tarpaṇa, Varti, Puṭapaka and Añjana (Drops, Paste and Collyrium) are used by this way for eye diseases.

4. Ear —Washing, fumigation and drops are used by this route in diseases of ear.
5. Anus —Āsthāpana and Anuvāsana enemata are administered by this route. Phala varti (suppository) is used in cases of constipation.
6. Urethra—Uttara Basti is administered by this way in cases of urinary disorders.
7. Vagina—In vaginal and uterine disorders fumigations, suppositories, swabbing, plugging, washing etc. are administered by this route.
8. Skin—External applications in cases of skin diseases, oedema, arthritis, nervous diseases, ulcers, etc. are used in form of Abhayanga, Pariṣeka, Lepa etc.

Injection into blood :

There is one reference in the Buddhist text, Saddharma Puṇḍarīka, of injecting the drug into blood through a needle. In Caraka, through incision in the skin drug is brought in direct contact with blood in cases of poisoning. Śārṅgadharma has also followed this. He says—Even the unconscious patient gets up when the drug is brought in contact with blood.

General observation :

Drug should be administered after fully examining the patients in respect of ten points (Prakṛti, Doṣa, Bala etc.). The drug should be favourable to patients. For children, drugs should be Mṛdu Vīrya, Kasāya—Madhura, Milky and in small doses. Not too fatty, Rūkṣa, Uṣṇa, Amla, Guru and Kaṭuvipāka drug or diet should be administered to children. In breastfed infants drugs are administered to the

wet-nurse as well. In women, particular care should be taken of the menstrual period and pregnancy while administering any drug.

SECTION III
LITERATURE

SECTION III
LITERATURE

CHAPTER I ANCIENT PERIOD

The literature of Dravyaguna may be divided into three periods as follows :

- | | |
|--------------------|------------------------------|
| 1. Ancient Period | Upto 7th Cent. A. D. |
| 2. Medieval Period | 8th to 15th Cent. |
| 3. Modern Period | 16th Cent A. D. and onwards. |

Vedic Nighantu :

The R̥gveda, the oldest extant source, deals with a number of drugs which may be called as the oldest drug stock of Āyurveda. The number of drugs increased gradually due to addition in knowledge by advance of time and that is why the number of drugs in the Atharvaveda is quite larger than in the R̥gveda.

The history of Nighaṇṭu literature is also very old. There is existence of the Vedic Nighaṇṭu which was the basis of Nirukta, one of the six Aṅgas of the Vedic literature. Nighaṇṭu contained only the synonymous words which contained implicit meaning. This was the ancient method of conveying the idea in concise form. The Āyurvedic Nighaṇṭus also followed this pattern and earlier Nighaṇṭus described the drugs by way of synonyms. Quite later on properties and actions were added to it and a new pattern of Nighaṇṭus was evolved where properties and synonyms were described together. For example, the initial form of the Dhanwantari Nighaṇṭu (Dravyāvali) contained only synonyms which properties and actions were added to later on.

Saṁhitottara Nighaṇṭu :

It is said that in one of the manuscripts of the Suśruta Saṁhitā there was appended a nighaṇṭu.¹ Although no

¹ Hemarāja Sharma : Introduction, Kāśyapa Saṁhitā, p. 57.

definite information is available regarding the nature of contents it may be presumed that there was a tradition of appending a Nighaṇṭu at the end of the old Saṁhitās or the Nighaṇṭu might have been the part of the Saṁhitā itself and as such creation of the original author. Even if the point is debatable, there is no doubt that the old Saṁhitās contained sufficient valuable concepts and materials regarding Dravyagūṇa. The importance which was assigned to the subject can very well be imagined by the fact that the Caraka Saṁhitā starts with the Auṣadha-Catuṣka (Drug-quadruped) and ends with the Annapāna-Catuṣka (Food and Drinks Quadruped). Sūtrasthāna, Vimāna-Sthāna, Chikitsā-sthāna and Kalpa-sthāna are replete with the material of Dravyagūṇa. The concepts have been dealt with in Ch. 26 of the Sūtrasthāna and properties of mainly dietetic substances have been given in the subsequent chapters. There is no any separate chapter containing description of drugs alongwith properties and actions either in Caraka Saṁhitā or Suśruta Saṁhitā. although here and there such descriptions are found. This appears first time in the Aṣṭāṅga Samgraha of Vāgbhata I where a separate chapter (Su. 12) has been devoted to this and a pattern of systematic description of classified drugs has been evolved. This has been followed by Vāgbhaṭa II (Su. 6).

Rasavaiśeṣika :

The date of Rasavaiśeṣika can't be fixed with certainty but if its author, Nāgārjuna, is identical with the redactor of the Suśruta Saṁhitā, the work may be assigned to the 5th cent. A. D. and may be taken as the oldest extant text on the concepts of Dravyagūṇa.

CHAPTR II

MEDIEVAL PERIOD

The majority of the Nighaṇṭu literature is produced during this period. The following works are noteworthy.

Aṣṭāṅga Nighaṇṭu :

The author of this book is Vāhaṭācārya as its colophon indicates. Several Manuscripts are available particularly in the libraries of South India. Recently this work has been published.¹

It is very difficult to say whether this Vāhaṭācārya is identical with the author of the Aṣṭāṅga-Hṛdaya or the Aṣṭāṅga Saṁgraha which is the basis of this work. The text contains synonyms of drugs belonging to various gaṇas of the Aṣṭāṅga-Saṁgraha. In the end, some other drugs and substances have been described. It can not be the work of Vāgbhaṭa I as it contains some of the drugs mentioned in the Aṣṭāṅga-Hṛdaya and not found in Aṣṭāṅga-Saṁgraha. Moreover, it has described such drugs like Pūti which are not found in the Aṣṭāṅga-Hṛdaya and as such its authorship can't be ascribed even to Vāgbhaṭa II. It further leads to conclude that it belongs to some later period when such drugs were already introduced in Āyurvedic Medicine. Jejjāṭa and Mādhava, the author of the Paryāyaratnamālā

¹ P. V. Sharma (Ed.)—The Aṣṭāṅga Nighaṇṭu of Vāhaṭācārya, Kuppuswami Shastri Research Institute, Madras, 1973.

{ Both 9th Cent. A. D.) as well as Cakrapāṇi (11th Cent. A. D.) have probably utilised this work. Hence this may be placed before them in the 8th Cent. A. D.

Paryāyaratnamālā :

The last verse shows that the work is composed by Mādhava, son of Indra kara and resident of Śilāhrada. Many scholars taking 'Indra kara' as 'Indu kara' make this Mādhava identical with the author of the Rugviniścaya (Mādhavanidāna) and place him in the 7th Cent A. D.

Out of so many Mādhavas (Aufrecht has mentioned 50 or so) Three are prominently above others distinct from each other :

1. Mādhava—The author of Nidāna and Cikitsā (Mādhava-cikitsita) and son of Candra kara¹. He has not mentioned his place.
2. Mādhava—The author of Paryāyaratnamālā; son of Indra kara (not Indu kara) and resident of Śilāhrada probably Patharghaṭṭā, the site of the University of Vikramśilā, near Bhagalpur (Bihār); most probably connected with the university (as teacher).
3. Mādhava—The author of Dravyaḡaṇa.

Taking this into consideration, the view of Dr. Tārāpada Choudhary that this Mādhava is identical with the author of

¹ In the Colophon of Mādhava-cikitsita mādharma has been said as the son of Candra kara. In the text of Nidāna nowhere father's name is mentioned. Only in 14th Cent. A. D. Vācaspati has said Indu kara as father of Mādhava which can't be relied upon.

the Rugviniścaya and as such his date may be fixed as 7th cent. A.D.¹ is untenable. Moreover, the following points are noteworthy :

1. The Rugviniścaya has been quoted and followed by Vṛnda (9th Cent. A. D.) while the Paryāyaratnamālā has not been quoted by any author prior to Sarvānanda (12th Cent A. D.), the illustrious commentator on the Amarakośa.
2. The Mādhava Nidāna does not contain description of 'Bradhna-roga' while it is described in Vṛnda's work and the Paryāyaratnamālā. This fact carries the latter work later than the former one.
3. The Paryāyaratnamālā contains Pārada (Mercury), Gandhakā (Sulphur), Abhraka (Mica) etc. which indicates somewhat developed state of Rasa-śāstra while, on the other hand, the Mādhava-Cikitsita does not contain any Rasa-yoga. This puts the Paryāratnamālā later than the Mādhava-cikitsita.
4. on one side, the Paryāyaratnamālā has got Persian influence on the word 'Vātingan' for brinjal (Persian-Bādingān) while on the other side, it has imitated a verse from a work 'Śiśupālavadhān' (2, 112) of Poet Māgha belonging to late 7th or 8th Cent. A. D.
5. The Dhanwantari Nighaṇṭu has described Ahiphena, Bhaṅgā, Yaśada etc. which are not found in the Paryāyaratnamālā. Some verses from Rasaratnasamuccaya are quoted in the former work while there is none in the

¹ T. P. Chowdhary (Ed.)-Paryāyaratnamālā, Patna University Journal, Vol. II, 1964, Introduction, P. 1-2.

latter work. It is to be noted that the word 'Vijayā' is used for Haritakī and Tarkarī and not for Bhangā.

All these facts place the Paryāyaratnamālā earlier than the Dhanwantarī Nighaṇṭu.

Therefore, Mādhava, the author of the Paryāyaratnamālā may be placed between 8th and 10th e.g. 9th Cent. A. D.

Nighaṇṭu :

Cakrapāṇi has quoted some verses from a Nighaṇṭu (C. Su. 27.4, Ci. 7.70) which shows that this work was popular in 11th cent. A. D. and was composed earlier probably in 9th or 10th cent. A. D. It has also been quoted by Kṣīraswāmī (11th cent. A. D.), Sarvānanda¹ (12th cent. A. D.) both commentators on the Amarakośa; Śrīkaṇṭhadatta² (13th cent. A. D.), Āḍhamalla³ (14th cent. A.D.) and Śivadāsa Sena⁴ (15th cent. A.D.) which shows its popularity till 15th cent. A. D. Now the work is not known.

Siddhaśara Nighaṇṭu :

This is a work by Ravigupta, son of Durgagupta, a Buddhist scholar. This is also known as Sārottara Nighaṇṭu because it is appended to the author's main work Siddha Sāra, a work on medicine. Its several verses are borrowed by Vṛnda in his Siddhayoga (900 A.D.) and it is often quoted

¹ The Amarakośa (with commentaries of Kṣīraswāmī and Sarvānanda) Trivandrum Sanskrit series Vol. 2 (1915) pp. 2, 100, 292; Vol. 3 (1917), pp. 216, 243; Vol. 4 (1917), p. 13.

² Vṛndamādhava, Anandāśrama, Poona 1.201, 32.6

³ Śārṅgadhara Saṁhitā, Khaṇḍa 2, 6-9-11.

⁴ Cakradatta, Calcutta, p. 70, 137.

by Candraṭa (early 10th cent A. D.). Thus this can't be placed after 9 th cent. A. D.

The text contains 193 verses in śloka meter. At the end Dravyāvali (a list of drugs) is given¹.

*Dhanwantri Nighaṇṭu*² :

Traditionally it was regarded as the oldest Nighaṇṭu. some scholars say that the Vanauśadhi Varga of the Amarakośa is based on this work and as such its date must be earlier than that of the Amarakośa (5th-6th cent. A. D.). But other scholars place The Amarakośa itself as late as 10th cent A. D.³. Let us consider the evidences in this respect :

External Evidences :

1. Hemādri, the commentator of Aṣṭāṅgahrdaya and authority on religious texts, refers to Dhanwantari Nighaṇṭu Hemādri's date is the end of the 13th cent. and the beginning of the 14th cent. A. D. Hence the Dhanwantari Nighaṇṭu must be before this.

¹ Prof. R. E. Emmerick. Hamburg University (W. Germany)

Has given a detailed critical study of the work and its contents on the basis of some Sanskrit, Tibetan and khotanese manuscripts. For this see his following articles :—

- I. The Sanskrit Text of Siddhasāra — Bulletin of the school of oriental and African studies, London, Vol. XXXIV, Part 1, 1971, pp. 91-112.
- II. On Ravigupta's Gaṇas — B. S. O. A. S., London, Vol. XXXIV, Part 2, 1971, pp. 363-75.
- III. New light on the Siddhasāra — B. S. O. A. S., London, Vol. XXXVII, Part 3, 1974, pp. 628-54.

² Anandāśrama, Poona, 1896, 1925.

³ Trikāṇḍaśeṣa, Bombay, 1916, Introduction, p. 7.

2. Niścala Kara (13th cent. A. D.) has mentioned the name of Dravyāvalī, but not the Dhanwantari Nighaṇṭu.

3. Arunadatta, the commentator on Aṣṭāṅgahr̥daya, has quoted the Dhanwantari Nighaṇṭu.

Arunadatta flourished in the middle of the 13th cent. A. D. and as such the work must have preceded this.

4. Hemacandra, in his commentary on Abhidhānacintāmaṇi, has referred to Dhanwantari. The date of Hemacandra is 12th cent. A. D. and as such Dhanawantari Nighaṇṭu must be prior to this.

5. It is surprising that Dallana (12th cent. A. D.) has not mentioned any Nighaṇṭu in his commentary on Suśruta although he has given a good and vivid description of plants and other drugs. This is a fact which deserves serious consideration and analysis. If there was Dhanwantari Nighaṇṭu what prevented him from using this. The other alternative is that he might be connected with the authorship of the work which he would have taken after completing the commentary. In other words, the commentary of Dallana may be before the work. As a corollary to this, Dallana might have preceded the Dhanwantari Nighaṇṭu.

6. Vardhamāna, in his *Gaṇaratnamahodadhi*, has quoted a verse from the Dhanwantari Nighaṇṭu but not by name.

Vardhamāna has given the date of composition of his work as A. D. 1140. Hence the Dhanwantari Nighaṇṭu must have preceded that.

7. Chakrapāṇi (11th cent. A. D.), the commentator of Caraka Saṃhitā, has mentioned *Nighaṇṭu* and

Nighaṇṭukāra at two places but he does not quote the *Dhanwantari Nighaṇṭu* anywhere.

8. Kṣīraswāmī, the commentator on *Amarakoṣa*, quotes *Dhanwantari Nighaṇṭu* and *Indu Nighaṇṭu*. Kṣīraswāmī's date is 11th cent. A. D. Hence the date of the *Dhanwantari Nighaṇṭu* must be before this. *Indu*, the author of the *Nighaṇṭu* quoted here, must be a person different from that of the same name who wrote the *Śaṣīlekhā* commentary on *Aṣṭāṅga Saṁgraha* because this commentary has not been referred to by any author before Hemādri (13th-14th cent. A. D.). *Indu* has utilised *Dhanwantari Nighaṇṭu* as well as *Aṣṭāṅga Nighaṇṭu* in this commentary. On this basis, the authors of *Indu Nighaṇṭu* and the *Dhanwantari Nighaṇṭu* may be taken as contemporary and may be placed before Kṣīraswāmī (11th cent. A. D.).

Internal evidences :

In introduction after salutation to *Dhanwantari*, the author says that he is composing this book as a short treatise dealing with drugs taking the essential facts from the ocean-like literature of *Nighaṇṭus*. It shows that there was a vast literature on *Nighaṇṭu* at the time of its composition. The name of this work is *Dravyāvalī* which has come out of the mouth of *Dhanwantari* and has been composed for the benefit of the *Vaidyas'* sons (traditional *Vaidyas*), enumerating the drugs in seven groups (*vargas*) such as *guḍūcyādi*, *śatapuṣpādi*, *candanādi*, *karavīrādi*, *āmṛādi*, *suvarṇādi* and *miśrakādi* alongwith their uses. In the end, he says that the synonyms of these drugs will follow in order, but instead of this *Dhanwantari Nighaṇṭu* starts with salutation to *Dhanwantari* and with contents of *Rasa*, *Vīrya*, *Vipāka*, etc.,

of drugs. This shows that the two works are quite different from each other.

If they were the same there would not have been a separate salutation, a different name of the work and contents different from those proposed in the introduction.

There is also difference in nature of the facts which places these works (*Dravyāvalī* and *Dhanwantari Nighaṇṭu*) in different periods. The former work seems to be an earlier one while the latter one seems to be of the later period. The following facts in relation to the *Dhanwantari Nighaṇṭu* deserve consideration.

1. There are several drugs mentioned and described in it which are definitely of the medieval period not before 12th cent. A. D. such as *Ahiṣhena* (opium), *Jayaṣpāla* (croton), *Agnijāra* (ambara), which were introduced in this country by Muslims. The words *mleccha* and *yavana* have been used probably for Muslims.

2. The detailed descriptions of *Pārada* alongwith its *saṁskāras* and *gandhaka* show the advanced state of *Rasa-śāstra*. Most of the facts and verses have been taken as such from *Rasaratna Samuccaya* a work of the 13th cent. A. D.

3. The mention of *yaśada* (zinc) further leads this work to at least 14th cent. A.D. because before that *yaśada* has not been mentioned in any work not even in *Rasaratna Samuccaya*. Thus *Dhanwantari Nighaṇṭu* will be a contemporary of *Rasaratnasamuccaya*.

4. There is also reference of *Siddhaṣadhi* and *Nāgārjuna* which indicate the advanced state of tantricism and *Rasa-śāstra*.

In the former portion (Dravyāvalī) none of the above facts is found except the word '*Rasa*' for pāraḍa.

As mentioned above, the Dhanwantari Nighaṇṭu has not been mentioned explicitly by any author in the Āyurvedic field before Aruṇadatta. Taking this into account it may be placed before Aruṇadatta in the 13th cent. A. D. The same position is of Indu who has been referred to first by Hemādri. In the commentary on Aṣṭāṅga Saṁgraha Indu has quoted several verses from Nighaṇṭu out of which some are found in Dhanwantari Nighaṇṭu and others in Aṣṭāṅga Nighaṇṭu which seems to be an earlier work followed by both Indu and Dhanwantari Nighaṇṭu. If Indu, the commentator and lexicographer, is the same person the question of the date of Kṣīraswāmī will have to be reconsidered because he has referred to both Indu and Dhanwantari Nighaṇṭu. The only difficulty is that some of the quotations of Dhanwantari Nighaṇṭu cited by him are not found in the extant book. Hemacandra (12th cent. A. D.) has quoted both Kṣīraswāmī and Dhanwantari Nighaṇṭu. Hence they must be before that period. It may be possible that Kṣīraswāmī might be referring to Dravyāvalī as Dhanwantari Nighaṇṭu and Indu also might be a person different from the commentator Indu.

As regards the reference of the work in Vardhamāna's Gangaratanamahodadhi, it is also not explicit but the verse is found in Dhanwantari Nighaṇṭu the quoted verse should be assigned to Dravyāvalī which might have been mixed with Dhanwantari Nighaṇṭu later on.

Conclusion :

1. The Dravyāvalī and the Dhanwantari Nighaṇṭu are two different works composed by different authors and at

different periods. The only similarity is that both the works start with salutation to Dhanwantari. Dhanwantari is not concerned with the authorship of any of these works at all.

2. From external and internal evidences, the Dravyāvalī may be placed in the 10th cent. A. D. as it is quoted by Kṛiṣṇaswāmī (11th Cent. A. D.) and the Dhanwantari Nighaṇṭu in the 13th cent. A. D., not before and after as it quotes Rasaratnasamuccaya (13th Cent. A. D.) and is quoted by the authors like Aruṇadatta (13th Cent A. D.). After a lapse of some time both these works were confused to be one and of the same author.

3. The actual text of the Dravyāvalī referred to by the authors is not available at present¹. It seems that the whole text of this work was mingled up with the Dhanwantari Nighaṇṭu. In the existing text of Dhanwantari Nighaṇṭu the portion dealing with synonyms might be from Dravyāvalī and that dealing with properties and actions might be from Dhanwantari Nighaṇṭu. It should be noted that Dravyāvalī contained only synonyms of drugs like other Nighaṇṭus of that period. Perhaps the Dhanwantari Nighaṇṭu is the first to deal with properties and actions of drugs. In most of the manuscripts the author of the work is Mahendra Bhogika. Most probably he is the person who gave final shape to the work². The subject matter of the text has been classified into seven chapters (vargas) as follows :

¹ Some manuscripts are available in Mithila Research institute; Darbhanga.

² P. V. Sharma : The Date of Dhanwantari Nighaṇṭu, I. J. H. S., Vol. 5, No. 2, 1970, pp. 364-370.

1. Guḍūcyādi
2. Śatapuspādi
3. Candanādi
4. Karavīrādi
5. Āmrādi
6. Suvarṇādi
7. Miśrakādi

Indu Nighaṇṭu :

Kṣīraswāmī (11th Cent. A. D.) has quoted many verses from *Indu Nighaṇṭu* which indicates its popularity at that time. The author of Śivakoṣa (17th Cent. A. D.) has also quoted some verses from it but at present it is not available.

Some scholars take *Indu*, the author of *Nighaṇṭu* and *Indu*, the commentator on the *Aṣṭāṅga-Saṅgraha* and *Aṣṭāṅga-Hṛdaya* as one and the same but in face of the facts this view can't be accepted. *Indu*, the commentator has not been quoted by any author earlier than Hemādri (13th Cent. A. D.) while *Indu*, the author of the *Nighaṇṭu* has been quoted as early as in 11th Cent. A. D. by Kṣīraswāmī. Therefore, probably they are different persons belonging to different periods.

As *Indu Nighaṇṭu* is quoted by Kṣīraswāmī (11th Cent. A. D.) the work must have been composed latest in 10th Cent. A. D.

Candranandana-Nighaṇṭu (10th Cent. A. D.)

Candra-Nighaṇṭu (10th Cent. A. D.)

Nimi-Nighaṇṭu (10th Cent. A. D.)

*Haramekhāiā-Nighaṇṭu*¹ (965 A. D.)

¹ Pub. Trivandrum.

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All the above four works have been quoted by Kṣīra-swāmī (11th Cent. A. D.) and as such have been placed earlier than him.

*Dravyagūṇa-Saṁgraha*¹ :

Its author is Cakrapāṇidatta (11th Cent. A. D.), the well-known commentator on the Caraka-Saṁhitā, Nārāyaṇa was his father and Bhānudatta his elder brother, both connected with the court of Nayapāla, the King of Bengal (1038-1055 A. D.).

The text contains description of dietetic substances and is divided into 15 chapters.

Aruṇadatta Nighaṇṭu :

Vardhamāna in his Gaṇaratna-Mahodadhi (1140 A. D.) has quoted a verse from Aruṇadatta regarding properties of Rasona (Garlic). From this it is evident that there was some Nighaṇṭu composed by Aruṇadatta. The question is whether this Aruṇadatta is the same as the lexicographer and the commentator on the Aṣṭāṅga-Hṛdaya ? Most probably the lexicographer Aruṇadatta is the author of this Nighaṇṭu and is different from Aruṇadatta, the commentator who belonged to the later period. It is to be noted that Hemacandra, the illustrious lexicographer also composed a work on Nighaṇṭu (Nighaṇṭuśeṣa) as well apart from his lexicon, Abhidhāna-Cintāmaṇi. The date of the lexicographer Aruṇadatta may be fixed as 11th Cent. A. D. or beginning of 12th Cent. A. D. .

¹ The text is published with the commentary of Śivādāsa Sena from Calcutta (1871). Another edition is from Gaṅgā Viṣṇu Śrī Kṛṣṇadāsa, Bombay (1925).

Vāṣpacandra-Nighaṇṭu :

Vopadeva (13th Cent. A. D.) has quoted many verses from this work in his commentary on Siddhamantra. This shows that Vāṣpacandra was also an author of Dravyaguṇa apart from being a famous commentator on ancient Samhitas. The date of Vāṣpacandra is fixed as 12th Cent. A. D.

*Nighantuśeṣa*¹

This work is composed by the Jain scholar and lexicographer Hemacandra (12th Cent. A. D.). It contains only synonymous words and the subject matter is divided into six chapters as Vṛkṣakāṇḍa, Gulmakāṇḍa, Latākāṇḍa, Śākakāṇḍa, Tṛṇakāṇḍa and Dhānyakāṇḍa. Rudrākṣa, Putrañjiva, Cānakyamūlaka, Yāvanāla etc. have been described in the text. Among Hemacandra's other works Abhidhāna-cintāmaṇi, Anekārtha-Saṃgraha and Deśi Nāmamālā are noteworthy.

Soḍhala Nighaṇṭu :

The Nighaṇṭu of Soḍhala popularly known as Soḍhala Nighaṇṭu is an important work on Indian Materia Medica. In one of the MSS,² the title of the work is 'Guṇa-Saṃgraha' while in the other³ it is 'Nāma-Saṃgraha'. Probably both these manuscripts are complimentary to each other and thus the title of the text may be as *Nāmaguṇa-Saṃgraha* having synonyms and properties of drugs. The work has not been published as yet and as such the above two MSS. are the sources of information for this study.

¹ Pub. with Vallabha Gaṇi's commentary, Ahmedabad, 1968.

² MS. No. 349 of 1880-81 of Govt. MSS. Library, Bhandarkar Oriental Research Institute, Poona.

³ MS. No. 927 of 1884-87 of Govt. MSS. Library, Bhandarkar Oriental Research Institute, Poona.

AUTHOR

Valuable informations are available in the MS. about the author. He belonged to the Rayakawāla family of Brāhmaṇas in Vatsa Gotra. His father's name was Bhāskara who himself was a scholar of Āyurveda.¹ Sodhala and his father were followers of Vāgbhaṭa and as such the former has quoted him and his works Aṣṭāṅga-Saṁgraha and Aṣṭāṅga Hṛdaya with reverence. In addition to Āyurveda, Sodhala was a scholar of Sāhitya, Jyotiṣa and Vyākaraṇa and was a good poet too. He was a devotee of Sūrya as appears from the salutary verses.

DATE :

Sodhala has said in the introductory verses that the students had to face great difficulty in books having no list of drugs (Dravāvali) and proper classification and arrangement of subject matter compiled with defective nomenclature and as such with the idea of removing this difficulty he composed this work after consulting popular works of Agniveśa etc. and arranged in groups of Guḍūcyādi etc. with proper nomenclature of drugs. This would also solve controversies among various texts and would describe the properties of drugs with their Rasa, Vīrya, Vipāka etc. in not too detailed or too concise form so that the same might be easily understood. He has also mentioned Karāla etc. among ancient authors and Vāgbhaṭa, a comparatively later author. Between Aṣṭāṅga-Saṁgraha and Aṣṭāṅga-Hṛdaya, he preferred the latter because of the concise style and as

¹ Father's name is taken as Svaccha, Nandana or candana by different scholars but his salutation to Bhānu (Bhāskara) is significant. Śārṅgadeva in his Saṅgītaratnākara says himself as the son of Sodhala and the grandson of Bhāskara.

such has quoted much from the same, although he has borrowed much from Caraka and Śuśruta as well. In *Gadanigraha* he has followed the Rogaviniścaya of Mādhava and Vṛnda's Siddha Yoga.

This work has got intimate relation with the Dhanwantri Nighṇṭu. Dravyāvali (list of drugs described) and the groups of drugs are the same as in the Dhanwantri Nighṇṭu with a little difference that the seventh group is the Lakṣmaṇādi in Soḍhala's while it is Miśrakādi in the Dhanwantri Nighṇṭu. The style adopted by the Dhanwantri-Nighṇṭu became obsolete after lapse of time and it was just an attempt for revival of the same by Soḍhala. At the same time he left unnecessary details given in Dhanwantari Nighṇṭu and made it concise so as to enable the students to grasp the subject easily and in a short time. Thus Soḍhala made a balance between the merits and demerits of the Dhanwantari Nighṇṭu in his work.

The date of the Dhanwantri Nighṇṭu¹ is 10th Cent. A. D. and taking into account some interval between these two works the Nighṇṭu of Soḍhala may be placed in the 12th Cent. A. D.

He also seems to have utilised the commentary of Dallāṇa on Śuśruta Saṁhitā as appears from his description of Madhu². The date of Dallāṇa is early 12th Cent. A. D. Hence the date of Soḍhala can't be anterior to this. Coming to the lower limit. Bhāvamisra (16th Cent. A. D.) has taken enough material from Soḍhala's Nighṇṭu such as description of Haritakī, Cavikā-Gajapipalī, Karpūra,

¹ Sharma, P. V.; *The Date of Dhanavantari Nighṇṭu*, I. J. H. S., Vol. 5 No. 2 (1970) pages. 364-370.

² Dallāṇa (*Suśruta, Sūtra*, 45. 133).

Pārasika Yavāni, Latākastūrī, Balācatuṣṭaya etc., the magical action of Cetakī, a variety of Harītakī has been the contribution of Soḍhala and was borrowed by Bhāvamiśra. Madanapāla (14th Cent. A. D.) has also followed Soḍhala in his Nighaṇṭu. Śārṅgadhara (13th Cent. A. D.) has followed the style and content of the works of Soḍhala particularly Gadanigraha. Keśava (13th Cent. A. D.) also seems to have taken some help from Soḍhala Nighaṇṭu. A drug named 'Narapuṣpa' is found in Keśava's *Siddhamantra* as well as Soḍhala Nighaṇṭu while it is absent in Dhanwantari Nighaṇṭu. Vopadeva (13th Cent. A. D.) has also utilised Soḍhala's work in explaining most of the things in his commentary on Keśava's above work The *Pseudo-Hārīta Saṁhitā* resembles in many portions with the Soḍhala Nighaṇṭu.¹ The date of the Pseudo-Hārīta Saṁhitā has been fixed near about 12th Cent. A. D.² Looking to all these facts, the date of the Soḍhala Nighaṇṭu should not be later than 12th Cent. A. D. Therefore, Soḍhala may be placed in later 12th Cent. A. D.

As regards the internal evidences, the following facts are to be noted :

1. There is no mention of Yaśada among Dhatus. Yaśada is not found in texts before 14th Cent. A. D.
2. There is no mention of Jayapāla which has been elaborately described and used in various preparations by Śārṅgadhara (13th Cent. A. D.).

¹ The description of Harītakī seems to have been borrowed from Soḍhala by the Pseudo-Hārīta.

² Sharma, P. V.—The *Pseudo-Hārīta Saṁhitā*, I. J. H. S., Vol. 10, No 1, 1975.

3. There is mention of the use of Bhaṅgā, Ahiphena, Akarakarā, Rūmī Mastakī etc in Gadanigraha which were introduced in India near about 12th Cent. A. D. by influence of Arabic medicine. These have not found place in Soḍhala Nighaṇṭu.
4. There is mention of Pārada and its Saṃskāras which were developed in the medieval period near about 10th Cent. A. D.
5. Kaṅkuṣṭha was a synonym of Svarṇakṣīrī previously as found in Aṣṭāṅga Nighaṇṭu¹ (8th Cent. A.D.). In the commentary of Dallāṇa (12th Cent. A. D.) it is taken as the Nirvāsa of Svarṇakṣīrī and in later texts it is separately mentioned. In Soḍhala Nighaṇṭu too, Kaṅkuṣṭha is mentioned separately from Svarṇakṣīrī.

In some respects the descriptions in the Dhanvantari Nighaṇṭu are more developed than in the Soḍhala-Nighaṇṭu. For instance, Aralu and Śyonāka are two different drugs which have been mixed together as synonyms in later period. In Soḍhala Nighaṇṭu they are described separately while in Dhanvantari Nighaṇṭu they have been mentioned as synonyms.

The Dhanvantari Nighaṇṭu is not the creation of one day. It took about three centuries in taking its present shape. The earlier portion, Dravyāvali, has its origin in 10th Cent. A.D. while the later portion took final shape by the 13th Cent. A. D. It seems that the Soḍhala Nighaṇṭu followed *Dravyāvali* but preceded the final form. It also shows that the MS. B of the Soḍhala Nighaṇṭu is of a later date.

¹ Sharma, P. V., *The Aṣṭāṅga Nighaṇṭu of Ācārya Vāhaṭa*, Journal of Oriental Research, Madras, 1973.

The most significant fact in deciding his date is his connection with kings Bhīllama, Jaitra and Siṅghaṇa of yadava dynasty of Devagiri (see saṅgītaratnākara). He died probably in 1225 A. D. during the reign of Siṅghaṇa (1212-1247 A.D.).

Gada-Nigraha, the other work of Soḍhala seems to be later than his Nighaṇṭu because most of the drugs used in the former have not found place in the Nighaṇṭu such as Bhaṅgā, Ahipheṇa etc. One salutary verse comes in both the works. Perhaps it has come in Gada-Nigraha from the Nighaṇṭu.

Text

The text starts with salutation to Lord Dhanvantari and the Sun-God. Then the author explains the purpose and the object of the work alongwith the style and the content. It has been emphasised that the physician who does not know the properties of diet and drugs is not fit to be a royal physician.

Then begins Dravyāvali, the list of contents under various groups. The entire text is divided into the following groups :

1. Guḍūcyādi Varga
2. Śatapuspādi Varga
3. Candanādi Varga
4. Karavīrādi Varga
5. Āmrādi Varga
6. Suvarṇādi Varga
7. Lakṣmaṇādi Varga
8. Pāṇiyādi Varga
 - a) Pāṇiya Varga
 - b) Kṣīra Varga
 - c) Dadhi Varga

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- d) Takra Varga
- e) Navanita Varga
- f) Ghr̥ta Varga
- g) Taila Varga
- h) Madhu Varga
- i) Ikṣu Varga
- j) Madya Varga
- k) Mūtra Varga
- l) Śuka-Dhānya Varga
- m) Jūrṇā Varga
- n) Tṛṇadhānya Varga
- o) Śimbidhānya Varga
- p) Kṛtāṇna Varga
- q) Anupāna Varga
- r) Māmsa Varga
- s) Miśrakādhyāya Varga

After this, the basic concepts of Dravyagūṇa such as Dravya, Rasa, Vīrya, Vipāka and Prabhāva have been described in short on the basis of ancient texts mainly Aṣṭāṅga Hṛdaya.¹

*Mādhava-Dravyagūṇa*² :

It is also known as 'Bhāvaswabhāvavāda, Mādhava, the author of this work is different from the two other Mādhavas, authors of the Rugvinīścaya and the Paryāya-ratnamālā respectively. This Mādhava Kavi comes under the following geneological table which is connected with

¹ P. V. Sharma : The Nighaṇṭu of Sodhala, A. B. O. R. I., Vol. LII. Poona, 1972.

² Mādhava-Dravyagūṇaḥ, edited by P. V. Sharma, Chowkhamba Vidyabhavan, Varanasi, 1973.

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Śrīkaṇṭhadatta, the Well-known disciple of Vijayarakṣita and the author of the Madhukoṣa commentary on the latter half of the Rugviniścaya and also of the commentary Vyākhyāku-sumāvali on Vṛnda's Siddhayoga :

Śrīkaṇṭhadatta

|

Cakradatta

|

Mādhava

|

Puruṣottama

As this work is quoted by Bopadeva (13th Cent. A. D.) in his commentary on Siddhamantra and itself follows Sodhala (12th Cent. A. D.), its date may be fixed as 1250 A. D.¹ Āḍhamalla, Śivadāsa Sena and Śivakoṣa have also quoted it which shows its popularity. Toḍarānanda in his Āyurveda-Saukhya has included this text entirely leaving (intentionally ?) the portion of the last verse containing the author's name.

The subject matter has been divided into 29 chapters. It contains descriptions of Jayapāla, Vijayā and Ahiphena.

Keśava's Son, Bopadeva, wrote a scholarly commentary known as Prakāśa on Siddhamantra².

Siddhamantra :

The Siddhamantra of Vaidyācārya Keśava is now a forgotten work of Indian Materia Medica. It was published

¹ See Introduction to the above publication.

² P. V. Sharma : Son's commentary on Father's work, J. R. I. M., Vol. VI, No. 3, 1971.

in 1898 From Jñānasāgar Press, duly edited by Vaidya Śankara Dāji Śāstrī with the assistance of śrī Bhālacandra.¹

The book is named as Siddhamantra-Prakāśa although there is no commentary. In introduction the editor has remarked that the Siddhmantra-Nighaṇṭu was not available. However, the present work by the same author deals with the subject and is like a catalogue of the same. He further adds that nothing particular is known about the author except some informations given at the end of the book which is as follows :

‘Keśava is the author of this work, who is born of Mahādeva, received training in Āyurveda from Bhāskara and honoured by Śimharāja.’

Śimharāja is Siṅghaṇa(1212-1247), an illustrious king in the Yadava dynasty of Devagiri and Bhāskara, Keśava’s teacher, is probably the father of Soḍhala. Thus Keśava may be placed in the first quarter of the 13th Cent. A. D.

Commenting on this his son Bopadeva states.—

“Mahādeva was a native of Vedapada in Mahārāṣṭra, Bhāskara was a royal physician of Vedapura and Śimharāja was a King of Daṇḍaka region.” From Bopadeva’s another work ‘Śataślokī’ it is known that the place ‘Vedapada’ was situated at the bank of river Varadā and was Capital of Śimharāja.

The Text :

The text starts with felicitations to Dhanwantari’s words regarding drugs.

¹ A photostat copy of this edition was obtained from the India Office Library, London, by the author.

Keśava has adopted a reverse method of describing the drugs in this Nighaṇṭu. The common practice was to describe the drug by its Rasa, Guna, Vipāka, Virya, and Prabhāva and decide its action on Doṣas and organs by inference with the help of these informations. In the present text the drugs have been arranged according to their effect on Doṣas and the Raṣa, Virya, Vipāka etc. have to be inferred on this basis. The drugs have been classified in eight groups as follows :

1. Vātaghna Varga
2. Pittaghna Varga
3. Kaphaghna Varga
4. Vāta-Pittaghna Varga
5. Kapha-Vātaghna Varga
- 6 Kapha-Pittaghna Varga
7. Doṣaghna Varga
8. Doṣala Varga

The author has taken decision in a peculiar manner on the points where the scholars differed from each other. Further he has gone deep into the subject and has described fifty seven types of drugs according to mode of effect on Doṣas. Further he adds that the properties of drugs are also found in their parts, types and products leaving, certainly, the exceptions. The object of this very short treatise is to make the vaidyas understand the effects of drugs easily and short in time.

The Commentary :

The title of the text is signified by the fact that as Siddhamantra by mere utterance enables a person to perceive the desired objects likewise by this text the drugs become clear to physicians in a very short time.

Hṛdayadīpaka :

The author of this work is Bopadeva or Vopadeva, son of Keśava and disciple of Dhaneśwara as mentioned in the concluding portion of the book. He was a resident of the place known as Vedapura situated on the bank of the river Varadā in Mahārāṣṭra which was the capital of a king named Siṃharāja. His teacher, Dhaneśwara or Dhaneśa was a vaidya who belonged to the same place. In one manuscript it is as Dhaneśwara Bhaṭṭa but in others it is only Dhaneśwara. In the Introductory verses of the Prakāśa commentary he mentions his parents as 'Ārogya' and 'Vaidyanātha', which may be for 'Lakṣmī' and 'Keśava'. This is supported by the introductory verse of the Hṛdayadīpaka where salutation has been offered to 'ṛi Vaidyanātha' with epithets of 'Aja' and 'Akṣara' which again denote Keśava.

Bopadeva was attached to Hemādri the well-known author of the commentary, Āyurveda Rasayanā, on Aṣṭāṅga-hṛdaya as a friend and colleague. Hemādri was the chief Minister of Mahādeva (1260-1271) and later on of his successor Rāmacandra (1271-1309) of Devagiri. Bopadeva is said to be the Pandit to king Mahādeva, therefore, the date of Bopadeva is fixed accordingly as latter half of the century. He has written a book 'Harilīlā' on the advice of the Minister, Hemadri, and also his biography perhaps in the last phase of his life. The books 'Harilīlā' and 'Muktāphala' are said to be commented upon by Hemādri himself.

Bopadeva was an erudite scholar of Āyurveda, Vyākaraṇa, Sāhitya, Jyotiṣa and Dharmaśāstra. He was a good poet as well as a good physician. His contributions are

important in various fields of knowledge. Perhaps he used his pen in the entire sphere of his scholarship. He himself has presented a list of his works in the concluding portion of his book 'Harilīlā'. According to this he wrote 10 books on Vyākaraṇa, 9 on Āyurveda, 1 on Jyotiṣa, 3 in Sāhitya and 3 on Bhāgawata. Thus the total number of his books comes to 26. Aufrecht¹ has given the following note about Bopadeva :

Bopadeva :

Son of Keśava, pupil of Dhaneśa. He was Pandit to Mahādeva, king of Devagiri. He is quoted in the Mādha-vīya Dhātuvṛtti.

1. Kavikalpadruma
2. Kāvya-kāmadhenu
3. Trīmśacchloki Aśaucasaṁgraha
4. Dhātukoṣa and Dhātupāṭha (two first named works)
5. Paramahamsapriyā
6. Paraśurāmapratāpatikā (Śrāddhakāṇḍa)
7. Bhāgawatapurāṇa Dwādaśa-Skandhānukrama
8. Mahimnastawaṭikā
9. Mukṭāphala
10. Mugdhabodha
11. Rāma Vyākaraṇa (Perhaps the same work as the last)
12. Śataśloki and Śataśloki-Candrakalā

¹ Catalogus Catalogorum. Part-I (1962), p. 616.

Gurupada Hāldāra has enumerated the following works of Bopadeva in his book Vṛddhatrayī (Page 467).

1. Mugdhabodha Vyākaraṇa
2. Siddha Mantra Prakāśa
3. Śārngadhara Samhitā-Tīkā
4. Śataśloki with commentary
5. Candrikā commentary on Hemādri's Śataśloki

13. Śārṅgdharasaṁhitā—Gūḍhārthadīpikā
14. Siddhamantra—Prakāśa (Sometimes attributed to his father)
15. Harilīlā
16. Hṛdayadīpa Nighaṇṭu
17. Some anonymous treatise of his on drama is several times quoted in the Nirṇaya Sindhu, in Ācāra Mayūkha and once in Śrāddha Mayūkha
- 18 Vopadevaśataka Kāvya.

Object and plan of the work :

It seems that the Aṣṭāṅga-hṛdaya was the popular handbook of Āyurveda and as such explanatory commentaries as well as books on its various aspects were the demand of the day. Particularly the drugs always attracted the scholars as this was the most important instrument of therapeutics. This tradition was coming down since long. The present work is intended to explain the drugs mentioned in Swalpa Vāgbhāṭa or Aṣṭāṅga-hṛdaya as the author calls it a Nighaṇṭu to enlighten the subject matter of the Aṣṭāṅga-hṛdaya in the concluding portion of the work.

The subject matter of the work is well divided into eight Vargas (Chapters) namely :

1. Catuspāda Varga
2. Tripāda Varga

6. Hṛdayadīpa Nighaṇṭu
7. Mukṭāphala
8. Commentary on Mahimnastotra
9. Harilīlā
10. Kavikalpadruma
11. Kāvya Kāmadhenu.

3. Dwipāda Varga
4. Ekapāda Varga
5. Dwināma Varga
6. Ekanāma Varga
7. Nānārtha Varga
8. Miśaraka Varga.

It follows the metrical style of Paryāya Ratnamālā of Mādhava rather than the alphabetical style of Viśwa-Prakāśa, Medinī etc.

In Miśraka Varga, the items other than drugs such as diet, Pañcakarma, other therapeutic measures etc. have been described.

Place of Hṛdayadīpakā in Nighaṇṭu literature :

The family of Bopadeva has a great contribution in the field of Nighaṇṭu literature to its credit. Bopadeva's father, Keśava, wrote a book 'Siddha Mantra' containing valuable informations on drugs. Bopadeva not only wrote a commentary called 'Prakaśa' on this work but also composed the present book on Nighaṇṭu. 12th Century is famous for great lexicographers like Medinī, Maheśwara, Hemacandra, Halāyudha etc. With this rich background it was but natural for Bopadeva to take up this work with success. This was the age of Bopadeva and Madanapāla who preceded Bhāva Miśra by two centuries. This it is a valuable link between the ancient and modern Nighaṇṭus utilising the rich accumulated knowledge in the then existing lexicons. Hṛdayadīpakā was a very popular Nighaṇṭu and there was no sign of decadence in its popularity even after appearance of Bhāva Prakāśa as is evident from the large number of MSS. available in various libraries located in different corners of

the country with the dates of transcription till 19th Century. In Saraswati Bhavan, Varanasi alone there are six MSS. of this work, four in Devanagari and two in Bengali script.

Somewhere, the name of this work appears as *Hṛdaya-dipaka Nighaṇṭu* but actually it seems to be *Hṛdayadipaka* only as appears from the beginning of the book (वक्ष्ये हृदयदीपकम्) and also from the Colophon in the end of each Varga (इति हृदयदीपके चतुष्पादवर्गः etc.) The word 'निघण्टु' ("वर्गैर्निघण्टुं संक्षिप्य" "चक्रे निघण्टुममलम्") only conveys the subject matter of the text and does not seem to be a part of the title of the book¹.

Āyurveda Mahodadhi (Suṣeṇa Vaidyaka) :

It is mainly a text of *Dravyaguṇa* containing description of dietary articles. Thus it is also known as '*Annapānavidhi*'. There is description of *Piṇḍa Kharjūra* and *Suvarṇakadalī*. *Dhattūra* has been used in aphrodisiac preparations. In one of the manuscripts there is '*siṅghaṇa cūrṇa*' which clearly indicates its existence after the date of king *Siṅghaṇa* (1212-1247 A. D.). *Suṣeṇa* has been mentioned in *Haṁsarāja-Nidāna* and *Langhana-Pathyanirṇaya* of *Dipacanda Vācaka*. Its verses have also been quoted in *Madanapāla Nighaṇṭu*. In view of these facts, *Suṣeṇa* may be placed in 14th Cent. A. D.

Dāmodara, son of *Viṣṇubhaṭṭa* and resident of *Vidarbha*, has written a commentary known as *Ārogyacintāmaṇi* on this work.

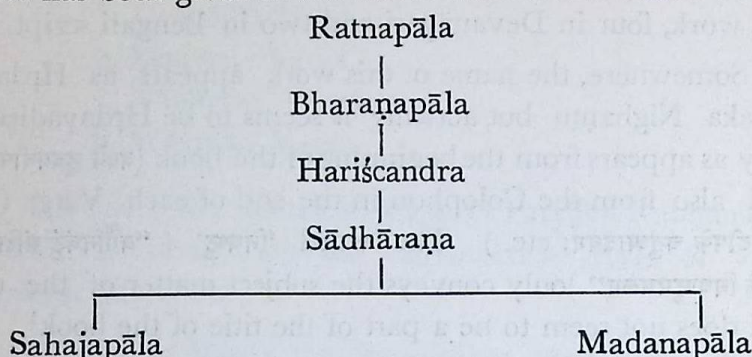
*Madanapāla Nighaṇṭu*² (*Madana Vinoda*) :

This work is composed by king *Madanapāla* of the *Tikā*

¹ P. V. Sharma : The *Hṛdayadipaka* of Bopadeva, J. R. I. M., Vol. 3, No. 2, 1969.

² (a) Pub. with Hindi com. (by Ram Prasad Sharma.), *Gangā Viṣṇu Śrīkṛṣṇa Dās*, Bombay, 1954.

(Tākā ?) dynasty at the city of Kāṣṭhā. The geneological table has been given at the end of the book as below :



Rāmarāja, the author of Rasaratnadīpa (1420 A.D.) is also a member of this family¹.

The date of composition of the work as given in the end the book is Samvat 1431 (1374 A. D.).

The subject matter of the text is divided into 13 chapters. There is no Yaśada² but it contains opium. Among other noteworthy drugs are Bhaṅgā, Kaṅkuṣṭha, Jayapāla Pārasika Yavānī, Cauhāra, Mārjārī, Sindūrī, Sulemānī, Kharjūra, Kharbuja, Amṛtaphala, Bādāma, Anjira, Madhu-karkaṭī, Gṛñjana, Yāvanāla, Kuṇḍalikā etc.

*Kaiyadeva Nighaṇṭu*³ :

The actual title of the book is 'Pathyāpathya

(b) Edited by Nand Kishore Shastri, Varanasi, 3rd Ed. 1933. with Hindi.

(c) Com. by Śaktidhara Shukla, Nawal Kishore Press, Lucknow 1917.

² Viśveśwara Bhaṭṭa (1360-1390 A. D.) a scholar of Religion wrote Madana Pārjīāta under the patronage of Madanapāla.

³ In some of the published editions Yaśada is introduced but I could not find it in a dozen of Manuscripts examined by myself. Probably it is a later interpolation.

vibodhaka'. Its author is Kaiyadeva, grandson of Padma-nābha and son of Śārṅga (sāraṅga?) belonging to Bharadwāja Gotra. As indicated in the introductory verses, Kaiyadeva also composed a dictionary of synonymous words known as Nāmaratnākara. This Nighaṇṭu was intended to describe the properties of the drugs mentioned in the nāmaratnākara.

Gode has fixed its date as before 1450 A. D. as it is quoted in Rāghavabhatt's commentary (1493 A. D.) on Lakṣamaṇa-deśikendra's Śāradā-Tilaka². It has mostly followed the Madanapāla Nighaṇṭu and as such it may be placed after that nearabout 1425 A. D.

The subject matter has been divided into 9 chapters as Oṣadhi-varga, Dhātu-varga, Dhānyavarga, Dravavarga, Pakvānnavarga, Māmsavarga, Vihāravarga, Miśrakavarga and Nānārthavarga. Among notable drugs described are Kaṇṭakaraṇja, Babbūla, Sindūrī, Mārkaṇḍī, Balācatuṣṭaya etc. Bakāyana has been taken by 'Mahānimba. 'Śākhāmla' is a synonym of Amlavetasa which shows that today's market drug sold in the name of Amlavetasa was prevalent also at that time. Descriptions of drugs are similar to those in Bhāvaprakāśa and as such it may be presumed that this work was followed by Bhāvamīśra closely.

¹ The first part of the book was published in 1928. (Meharchand Laksmanadas, Lahore) with a critical commentary by Acarya Surendra Mohan.

² P. K. Gode : Kaiyadeva and a medical or Botanical Glossary ascribed to him, A. B. O. R. I., Vol. XIX (1938-39), pp. 188-190.

CHAPTER III MODERN PERIOD

Bhāva Prakāśa :

Bhāvamiśra is an important landmark in history of Indian Medicine as he stands at the junction of the medieval and modern periods which is the turning point for its future course and also because of the fact that it revived the style of Saṃhitās and contributed a good deal to various aspects of Āyurveda by adding new ideas and drugs. His most popular work is *Bhāva-Prakāśa* (a light on medical ideas and substances or a light by Bhava Miśra) which is the basis of the present study. This is the last work in so-called *Laghu-Trayī* (smaller triad) of Indian Medicine which includes *Cakradatta* (or *Mādhava Nidāna*) and *Śārṅgadhara* besides *Bhava-Prakāśa*.

The author has given clue about his identity in the introductory verse of the book. He writes that this book (light) is being produced by Bhāvamiśra by compiling the ideas from his predecessors to dispel darkness of ignorance in medicine. From colophon it appears that he was the son of Śrī Laṭakana (Miśra). By the surname and direct reference of 'Vipra' and 'Bhūmideva' he seems to be a Brāhmaṇa.

He has not mentioned his native place anywhere. Some scholars say that he belonged to the region of Varanasi or Kanyakubja but they have not given any reason for the same. He has mentioned Viṣṇupada by the word 'Śrīpati-

'pada' which indicates his connection with Gayā which is the seat of the famous temple of Viṣṇupada. He has also used regional names prevalent in Magadh. He has also described types of Banana such Swarna, Champaka etc. which are commonly grown at Hajipur in Bihar.

In the field of Materia Medica Bhāva Miśra has made valuable contributions. Although he followed his predecessors in many respects he was able to adopt several new drugs which were introduced in medical practice at that time by contact of foreigners, Muslims as well as Europeans. His predecessor, Madanapāla had made his path easier by including in his Materia Medica drugs like Pārasika Yavāni, various products of opium, Bhaṅgā, Jayapāla, Ākarakarabha Kharbuja, Piṇḍakharjūra, Sulemāni, Amṛtphala (Nāsapati) etc. which were introduced in this country by Muslims.

While describing Vacā he has mentioned Pārasika Vacā (Bāla Vaca) and Dwīpāntra Vacā (Copacini). The latter drug is indicated in Phiranga Roga (syphilis), a venereal disease introduced in this country by Portuguese and other Europeans.

Apart from this the following drugs described by him are noteworthy :

1. Pudīnā—A plant having strong smell
2. Chohārā—A type of Kharjūra
3. Dārusitā (Dālacini)
4. Mārkaṇḍikā (Senna ?)
5. Sauvīra (A type of Badara fruit)
6. Kalambaka
7. Candraśūra
8. Kulañjana (Mahābhari vacā)
9. Āmrāgandhi Haridrā

10. Aranya Haridrā
11. Cukra
12. Latā Kastūrī
13. Gandha Kokilā
14. Gandha Mālātī
15. Cillaka
16. Taṅkāri
17. Carmakārāluka
18. Elāyaka
19. Āmrāvarta
20. Makhānna
21. Kumudabīja
22. Cīnāka
23. Cīciṇḍā
24. Āluka
25. Garjara
26. Khasa Taila
27. Sarjarasa Taila

Some of the peculiarities of description are as follows :

1. Puṣkaramūla has been said as a variety of Kuṣṭha. Actually they are different plants.

2. While describing Swarnaṅkṣīrī, its root has been termed as Coka.

3. Karpūra has been said to be of two types. Pakwa and Apakwa.

4. Kastūrī has been described as of three types according to place of its origin such as Kāmarupa (Assam), Nepal and Kashmir.

5. Tagara has been said to be of two types Tagara and Piṇḍa Tagara.

6. Kuṅkuma has been described as of three varieties according to place of origin such as Kāśmīra, Bāhlika (Balkha) and Pāraśika (Iran). Kuṅkuma grown in Kashmir is regarded as the best one.

7. Aśmantaka has been mentioned as one of the synonyms of Kāñcanāra.

8. Karañja is said to be of three types, Naktamāla, Pūtikarañja and Karañjī. The second and third ones have been termed as Prakīrya and Udakīrya.

9. Kukkuradru of Madanapāla has been described as Kakundara.

10. Gajapippalī has been described as fruit of Cavikā.

11. Vṛddhadāraka has been described as chagalāntrī. Madanapāla has mentioned it as of two types Mahāśyāmā and chagalāntrī.

12. Dugdhapāṣāna has been termed as Gaura Khaṭi.

13. In context of groups of drugs, Aṣṭavarga has been described in detail giving the source of all the drugs coming under the group. It is also said that these drugs are very rare and difficult to be obtained even by kings and as such their substitutes have been prescribed.

A group of four seeds named as Caturbija has been described.

14. Dhānya (cereals) has been said to be of five kinds (Dhānya-Paṇcaka) such as Śālidhānya, Brīhidhānya, Śukadhānya, Śimbidhānya and Kṣudradhānya.

In minerals, gold has been mentioned of five types and silver as of three types. In metals, zinc (Yaśada) has been described which is conspicuously absent even in Rasaratna-Samuccaya. Various sources of pearl have also been men-

tioned. There are mentioned several varieties of Banana as Māṇikya, Martya, Amṛta, Campaka etc. These are grown at Hajipur (Muzaffarpur) in Bihar state.

15. Due to non-availability and difficulty in procuring the drugs, substitutes have been prescribed and a long list of the same (Pratinidhi dravyas) is found in the text. But at the same time it is mentioned that the main drug in the preparation can not be substituted.¹

16. Criteria and tests for genuine drugs have been prescribed.² Soil has been described as of four types Brāhma (white), Kṣātra (red), Vaiśya (yellow) and Śūdra (black) in contrast with the five types according to Pañca Mahābhūta described by Suśruta. It is also indicated that the drugs growing in these soils may be used in people belonging to respective Varna³. The plant kingdom has been divided in five groups—Vanaspati, Vānaspatya, Kśupa, Vallī and Oṣadhi⁴. These descriptions are similar to those in Rāja Nighaṇṭu.

17. The parts of the plants used in medicine are mentioned with examples⁵.

18. The basic concepts of Dravyaguna have been very clearly put up in one verse⁶.

19. The definition of terms like Dīpana, Pācana etc. been given according to Śārṅgadharma (1. 6. 213-237).

¹ 1. 6. 138-167.

² 1. 6. 111-120.

³ 1. 5. 115.

⁴ 1. 5. 122.

⁵ 1. 6. 101-102.

⁶ 1. 6. 196.

C. Medicine :

Surprisingly enough, Dravya, one of the four components of Cikitsā has been taken as wealth instead of drug which shows that wealth was an important consideration in medical profession¹.

He has very closely followed the Śārṅgadharma Saṁhitā which is said to be of 13th Cent. A. D. In Nighaṇṭu portion he has followed the Madanapāla Nighaṇṭu (1374 A. D.) particularly in relation to the drugs introduced during the medieval period such as opium, Bhaṅgā, Pārasika Yavānī etc. As regards the lower limit, Bhāva Prakāśa has been quoted by Yogaratnākara (late 17th Cent. A. D.) and Trimalla Bhaṭṭa in Bṛhad Yoga Taraṅgiṇī which is placed near about 1650 A.D. Lolimbarāja (early 17th Cent. A.D.) has also followed Bhāva Prakāśa.

Harṣakīrti (17th Cent. A. D.²) in his Yogacintāmaṇi has borrowed Rativallabha Pūga Pāka, Kāmeśwara Modaka and other preparations from Bhāva Prakāśa. This work is definitely later than Bhāva Prakāśa as Rasa-Karpūra along with mercury ointment has been prescribed for syphilitic hard chancre termed as 'Candrikā' as in Yogaratnākara. The word 'Nāsūra' has been used for sinus³.

The most important point among internal evidences is the description of Phiraṅga Roga (Syphilis) along with its treatment with Rasa-Karpūra and other medicines. This disease was introduced in India by the contact of Portuguese and other European people near about 15th Cent. A. D. Although Rasa-Karpūra has been described in Rasa-Prakāśa

¹ 1. 6. 88.

² For the date of Harṣakīrti, see introduction to Sāradyākhyā Nāmamālā of Harṣakīrti, Poona, 1951.

³ Nighaṇṭu Phala, 127

Sudhākara the detailed description of the disease apart from Upadaśa and its treatment with Rasa-Karpūra is found in Bhāva Prakāśa for the first time. Copacīnī has also been indicated in this disease.

The author has used so many times Paścima deśa, Paśchād deśa and Paradwīpa. He has also mentioned the word 'Mudgal' for Mughals. This also indicates that he was at the time of Mughals. The words 'Mleccha' and 'Yavana' are also used perhaps for Muslims.

Jolly says that there is a manuscript of Bhāva Prakāśa in Tübingen dated 1558 A. D. But on examining it closely it does not come for help. The earliest manuscript of the work is in Śrī Raṇavīra Research Library, Jammu which is dated Sam. 1722 (1665 A. D.)

Looking to all these facts, Bhāva Miśra may be placed between 15th and 17th Cent. A. D. e. g. 16th Cent. A. D.

Other Works.

Aufrecht has mentioned Guṇaratnamālā as one of his works apart from Bhāva Prakāśa. While commenting the author has quoted once a passage from the former work (2. 24. 2). Thus it seems that Guṇaratnamālā was composed by him earlier than Bhāva Prakāśa.¹

Bhāva Miśra is an important landmark in History of Indian Medicine. He is the last author in Laghu-trayī of Ayurveda and the first one in the modern age. His date is 16th Cent. A. D. He occupies the same place in Indian

¹ Several Commentaries have been written on Bhāva Prakāśa Nighaṇṭu. Among which the two are important ones; one by Viśwanath Dwivedi (Motilal Banarasidass, 1941) and the other by Krishna Chandra Chuneekar (Chowkhamba, 4th ed; 1969).

Medicine as Bhaṭṭoji Dikṣita in Samskrit Grammer and Paṇḍitarāja Jagannātha in Poetics, all of them belonging to nearly the same period.¹ His Nighaṇṭu is still the most popular text-book of Dravyaguṇa.

*Rāja Nighaṇṭu*² :

It is also known as 'Nighaṇṭurāja' or 'Abhidhāna-cūḍāmaṇi'. Its author is Narahari Paṇḍita, son of Īśwarasūri and resident of Kashmir. Narahari was an erudite scholar of all branches of Samskrit learning and was also well versed in regional languages of Karnataka, Maharastra, Andhra etc.

This work was composed after going through the previous Nighaṇṭus and koṣas like Dhanwantari, Madanapāla, Halāyudha, Viśwaprakāśa, Amarakoṣa, Trikaṇḍaśeṣa, Rājakoṣa etc. particularly it is based on the Dhanwantari Nighaṇṭu. As it has mentioned Madanapāla, its date must be after 14th Cent. A. D. as regards its relation with the Bhāvaprakāśa Nighaṇṭu, it seems to be posterior to that because it has described drugs like Karpūra taila, Taila Pipīlikā, Kālāñjanī, Jhaṇḍu, Sarvakṣāra which are absent in the Bhāvaprakāśa Nighaṇṭu. Moreover, Rāja Nighaṇṭu has mentioned Kulañjana explicitly while it is as Mahābhārī Vacā in the Bhāva Prakāśa. The Dwīpāntara Vacā (Copacini) of Bhāvaprakāśa has been described probably in the name of Himāvalī by Rājanighaṇṭu. In view of these facts, the Rājanighaṇṭu may be placed in the 17th Cent. A. D, after the Bhāva Prakāśa. The identical verse

¹ P. V. Sharma : Bhāva Miśra—A Landmark in History of Indian Medicine, J. R. I. M., Vol. VII, No. 1, 1972.

² Pub. Calcutta, 1933 (2nd ed.); Anandashram, Poona, 1925 (with Dhanwantari Nighaṇṭu).

found in both the texts is probably borrowed by Rājā-nighaṇṭu from Bhāva Prakāśa. (1. 5. 95).

The subject matter has been divided in 23 chapters. Among noteworthy drugs described are Liṅginī, Somavallī, Kaivartikā, Kaṭvī, Amṛtasravā, Dhūmrapatrā, Rudantī, Hastiśuṇḍī, Dugdhapheṇī, Māyāphala, Kāraskara etc. The notable contribution of Rājānighaṇṭu is that it not only included Dravyaguna in Aṣṭāṅgas of Ayurveda but gave it the first place.

*Vaidyāwataṁsa*¹ :

This is a short treatise on Nighaṇṭu by Lolimbarāja, the well-known author of the Vaidyajiwanam. It contains description of dietary articles in seven chapters and 57 verses in all.

The date of Lolimbaraja is the first quarter of the 17th Cent. A. D.

*Dravyaguna Śataka*² :

The work on Materia Medica in one hundred verses entitled Śataślokī, Dravyaguna Śataślokī or Dravyaguna Śataka of Trimalla Bhaṭṭa is an important work. It contains description of properties and uses of the substances coming under the group of food (Āhāra-varga). In Ayurveda substances used in treatment are divided in two broad groups—auśadha (drugs) and āhāra (food). They are different in the respect that the former has got predominance of vīrya while the latter is predominant in rasa. Like

¹ Pub. with Hindi commentary (by Brahmanand Tripathi) Motilal Banarasidass, Varanasi, 1967.

² Pub. with Hindi Commentary (by Śāligrām Vaiśya), Khemaraj Sri Krishnadas, Bombay, 1896.

medicinal substances or drugs the food materials, preparations and other components have received due attention of the scholars and a distinct section of literature has developed in this branch. Perhaps the first available work coming under this group is the *Dravyaguṇa-Saṁgraha* of *Cakrapāṇidatta* (A.D.1060). The present work follows this tradition and comes under this group. Apart from the content, the Peculiar style has drawn attention of the scholars. There were physician scholars equipped with poetic genius and qualities who composed their works in a distinct style having literary beauty and grace. Thus these works do not contain only the author's skill in medicine but also show their poetic abilities and are specimens of good literary work. This has also led to development of a distinct class of literature in *Ayurveda* under which notable are *Lolimbarāja's Vaidyajiṇana*, *Mevā Ram's Vaidya-kaustubha* including the present work.

CONTENTS

The work starts with the verse of salutation to Lord *Śiva* along with *Girijā* and *Gaṇeśa* and ends with the same to *Pārvatī*. Apart from the above two verses for *maṅgalācaraṇa*, there are ninety-nine verses devoted exclusively to the subject, thus the total number of verses coming to one hundred and one. In the initial verse after *maṅgalācaraṇa* the six *rasas* along with their action on *doṣas* have been described. Thereafter starts the proper subject matter which has been divided into the following groups (*vargas*) :

1. *Jala-varga* (water)
2. *Dugdha-varga* (milk and its products)
3. *Dhānya-varga* (cereals)
4. *Māṁsa-varga* (meat)

5. Śāka-varga (vegetables)
6. Ikṣu-madhu-varga (sugar and honey)
7. Taila-varga (oils)
8. Phala-varga (fruits)
9. Śuṇṭhyādi-varga (spices)
10. Kṛtāṇṇa varga (food preparations)
11. Sandhāṇa varga (fermented liquors)
12. Madya varga (alcoholic beverages)
13. Abhyaṅgādi varga (massage and bath)
14. Tāmbūlādi varga (betel and its adjuvants)
15. Suvarṇādi varga (metals and mercury)

It is clear that the maximum number of verses are for food preparations and the minimum for liquors and massage-bath. Pārada (mercury) has been described in the last verse under the suvarṇādi varga alongwith other metals such as suvarṇa (gold), rūpya (silver), tāmra (copper), vaṅga (tin), abhraka (mica) and loha (iron). Conspicuously yaśada (zinc) and nāga (lead) are absent. In jalavarga various types of water coming from different sources have been described. Similarly in dugdha-varga milk and its various products like curd, butter, butter-milk, ghee have been described elaborately. Not only the general properties of milk have been given but also minute variations in properties due to variable factors have been noted such as milk of different species of animals like cow, buffalo and she-goat*; fresh warm, cold, boiled hot and cold and unboiled milk taken at different times—forenoon, noon, afternoon and night.

* No other animals except these three have been mentioned which shows the popularity of the milk of these animals.

Besides some new food preparations in Kṛtāṇṇa varga, the author has included lūkikā, śami-śimbī, karīra and phoga under śāka-varga and aṇjīra, amṛtaphala and daśāṅgula under phala varga. Most of the things he has borrowed from his predecessors particularly Madanpāla.

Author, his date and works

In this work there is no information about the author except that he was a poet too and Śiva and Pārvatī were his favourite God and Goddess. His other work commonly known as Yogataraṅgiṇī comes to our rescue with valuable informations. In the introductory portion of the text he says that Siṅganna Bhaṭṭa alias Āravella, a Tailanga Brāhmaṇa belonging to Āpastamba Śākhā, born at Koḍapalli but now residing at Kāśī, was grand-father and Vallabha, father of the author. Trimalla had two younger brothers, Rāma and Gopa, and a son, Śaṅkara Bhaṭṭa the author of Rasapradīpa. Trimalla Bhaṭṭa was a scholar of ancient Ayurvedic texts having acquired knowledge of the tradition from a guru and also attained experience in the profession.

The author has quoted the verse regarding 'Kāsaghñi Guṭikā' from Vaidyajīvana of Lolimbarāja. The date of Lolimbarāja has been fixed as A. D. 1608 by Jolly. Some scholars place him in A. D. 1633. On the other side, the author has been quoted by Yogaratnākara. The date of Yogaratnākara has been fixed in the end of 17th century A. D. one of the MSS. of the work at Ānandāśrama, Poona, is dated A. D. 1746 and as such it must be before that. Thus Trimalla may be placed near about A. D. 1650 a century after Bhāva Miśra and between Lolimbarāja, and Yogaratnākara. This is justified by the fact that one of the MSS. of Dravyaguṇa Śataśloki at Baroda is dated

Samvat 1725 (A. D. 1665). In a short time the work became popular as is evident from the MSS. of the work found in almost all the parts of the country from Jammu to Madras and Banaras to Baroda.

The author has followed Bhāva Prakāśa. The diagnosis and treatment of phiraṅga roga popularised by Bhāva Miśra was followed by Trimalla who has quoted Rasakarpūra originally found in Bauddha Sarvasva. There was frequent exchange of scholars from foreign countries at the time of the author. *Kulañjana* was introduced by Bhāva Miśra by the name of 'Mahābhārī vacā' which has been recommended as substitute of vacā by Trimallā. The famous verse regarding '*R̥tu-Haritakī*' of Bhāva Prakāśa has been borrowed by Trimalla. Further, the drugs like ahiphena, mājūphala, mastakī, bola, etc., have been used abundantly.

Among his other works Aufrecht has mentioned the following ones :

1. Yogatarāṅgiṇī
2. Vṛtta māṇikyamālā
3. Vaidya candrodāya

Rasadarpaṇa and a commentary on Sukhalatā's *Śataśloka* are also said as his works.

Thus Trimalla Bhaṭṭa advanced the tradition of Bhāva Miśra and Lolimbarāja together because of the rare combination of sound scholarship, professional ability and poetic genius in him.

There are several commentaries on this work. Kṛṣṇa-datta, son of Śivadatta Miśra (Author of Śivakoṣa) has written Dravyadīpikā commentary in Saṁskṛit.

*Śivakoṣa*¹ :

This a work of Śivadatta Miśra based on synonymous style. Śivadatta Miśra was the son of Caturbhuja of the Karpūriya (Kapūriyā) family who himself was a great scholar of Ayurveda and other branches of Sanskrit learning. Śivadatta acquired his knowledge in Ayurveda from his father which is mentioned in his several works. Caturbhuja himself was the author of the Rasakalpadruma. Some scholars assign a commentary on Rasahr̥daya to Caturbhuja but this seems to be a different person being Khandelwal Brahman of Kural family.²

Śivadatta Miśra was a resident of Kashi and his name is included in the list of Paṇḍitas of Kashi who eulogised Kavīndrācārya Saraswati in 17th Cent. A. D. the period of Śivadatta Miśra has been fixed as 1625-1700 A. D.³. the date of completion of the Śivakoṣa has been mentioned by the author himself as 1677 A. D.

The conspicuous thing is that the author himself has written a commentary known as 'Śiva-Prakāśa' on this work. The commentary is valuable from the fact that a large galaxy of previous authors and commentators have been quoted in the same which, on one hand, shows the extensive knowledge of the commentator and, on the other hand, throws light on the previous literature.

Samjñā Samuccaya is also one of his works a manuscript of which is dated 1719 A. D. Śivadatta Miśra's

¹ R. G. Harshe (ed.) : Deccan College, Poona, 1952.

² T. G. Kale : Introduction, Rasa-Hr̥dayatantra, Motilal Banarasi-Dass, 1927.

³ P. K. Gode : Karpūriya Śivadatta and his Medical Treatises, Poona Orientalist, Vol. VII, Nos. 1-2.

son, Kṛṣṇadatta Miśra was also a good scholar of Ayurveda and Dravyaguna who wrote a commentary known as 'Dravyadīpikā' on the Dravyagūṇa-Śataka by Trimalla Bhaṭṭa. He has also quoted a number of authors in his commentary.

*Rājavallabha Nighaṇṭu*¹ :

This Nighaṇṭu is composed by Rājavallabha Vaidya and redacted by Nārāyaṇa Dāsa. The date of the work is 18th Cent. A. D.². The text deals with dietary articles and is divided in six chapters. The work is published (Bombay, Sam. 1952, 1968).

Nighaṇṭu Ratnākara :

This is a voluminous work composed by Viṣṇu Vāsudeva Godbole and published in 1807 (Nirnayasaagar, Bombay). Later it was published in 1936 duly edited by Kṛṣṇa Shastri Navare with Marathi translation. It contains many modern drugs like Amaruda (Guava), Anjira (Fig), Kājūtaka (Cashew), Tamākhu (Tobacco), Sitāphala (Custard apple) etc. Its Hindī translation by Ravidatta Vaidya was published by Nawal Kishore Press, Lucknow (2nd ed., 1892).

Nighaṇṭu Saṁgraha :

Its author is Raghunāthji Indrajī alias Kato Bhaṭṭa. He was grandson of Murāri, a resident of Porbandar (Gujeat), second son of Indrajī who shifted to Junagadh and elder brother of wellknown Archaeologist, Bhagwānlāl Indrajī. He belonged to Prasnorā Nāgar Brāhman family.

¹ Pub. with com. (by Śāligrām Vaiśya), Venkateswara, press, Bombay, 1895.

² U. C. Gupta : Introduction, Vaidyaka Śabda Sindhu.

The work was completed on 19th March 1893. It contains description of 607 drugs among which 578 are plants. Several new drugs have been incorporated in the text. Now the book is not available.

Śāligrāma Nighaṇṭu bhūṣaṇa :

Commonly known as Śāligrāma Nighaṇṭu is combined portion of Vols. 7 & 8 of the Bṛhannighaṇṭu Ratnākara published by Khemraja Śrīkrṣṇadass, Bombay. Its author is Lālā Śāligrāma Vaiśya, son of Anandarūpa (Khusāl Rām) of Moradabad (U. P.)

The work was completed in 1896 A. D. The text is divided in two sections. First section contains 23 chapters and the second one 2 chapters. There is also supplement in the end. Many modern drugs have been included in the text.

A number of works have been at the credit of Lālā Śāligrāma among which Śāligrāmauśadha Śabdasāgara' (Khemaraj Shrikrisnadas, Bombay, 1925) is important from our point of view.

Vanauśadhi Guṇādarśa :

This important work in Marathi by Śaṅkaradāji Shastri Pade was published in seven volumes (3rd ed., 1909-13 A. D.). This may be taken as the last Nighaṇṭu of the 19th Century which showed the path to the coming generation.

CHAPTER IV

20th CENTURY

Vanaushadhi Darpaṇa :

Its author is Kavirāj Birajā Carāṇa Gupta, a disciple of Kavirāj Vijaya Ratna Sen, the well-renowned Vaidya of Calcutta. Gupta was patronised by the King of Cooch Bihar and the work was published in two volumes under his patronage in 1908-9. Foreword is written by Kaviraj Vijaya Ratna Sen. It has given description of many new substances like Ananas, Isafgol, Coffee, Papaya, Red pepper etc. In introduction the author has given valuable information about the literature of Ayurveda particularly Nighaṇṭus.

Vanaspati Śāstra :

It is actually description of the flora of the Barda forest of Gujarat which came out in 1910. Its author Jaikrishna Indrajī Thākar, was a born genius in this field who rose from a scrap to the enviable position of eminence whose help had become inevitable even for the foreigner botanists. Stalwarts like Kirtikar and Bapalal acquired much from his valuable contact. Later on in 1926 he published flora of Kutch region.

Nighaṇṭu Ādarśa :

This was originally published in Gujarati in two volumes in 1928 (Revised 2nd ed. 1966). First volume of Hindi edition is published from Chowkhamba, Varanasi (1968).

Its author is Vaidya Bāpālālji (b. 17-9-1896) who laboured hard to clear up the doubts regarding identity of Ayurvedic plants and drugs. He has given all the relevant material from the Ayurvedic texts as well as modern medical and botanical works. He also ransacked other branches of learning in search of the material regarding plants and during this search he published 'Plants in Samskrit literature' (1953) after surveying a number of literary works. His other important works are 'Plants in Vṛddha-trayī' (1931), Flora of Gujarat, Dravyaguṇa Śāstra' etc. At the age of eighty he is still working with the same zeal and enthusiasm. His recent work Study on Caraka' has been published by Oriental Research Institute, Baroda (1973).

In solving the problems of Controversial drugs his contributions are significant. He was Chairman of the Controversial drugs subcommittee (Ayurvedic Pharmacopoea Committee) Govt. of India. His latest views are embodied in the article 'Controversial Drugs in Indian Medicine' being published serially in Journal of Research in Indian Medicine (C. C. R. I. M. & H.).

Rūpa Nighaṇṭu :

Its author Rūpalal Vaiśya (b. 1871), resident of district Chapra in Bihar was born genius in this field. Although by profession he was a clerk in the Railways for a long time posted at Benaras (now Varanasi), he devoted all his time in studying, describing and painting the plants. He ran his 'Buti Pracaraka Karyalaya' at Englishia line Mohalla near Varanasi Railway station. He was also assistant editor of the Magazine 'Būṭidarpaṇa' published from

Lahore. His first publication 'Sandigdha būṭi citrāvalī' (Vol. I) came out from this office (1927). It contains description of some plants with photographs. Rūpa Nighaṇṭu was published by Nagari Pracarini Sabha, Kashi (1934) and his other work 'Abhinava būṭi darpaṇa' came out from Chowkhamba, Varanasi in two volumes (1940).

Sandigdha Nirṇaya (Vanauṣadha Śāstra) :

The work is composed by Pt. Bhagirath Swami who apart from academic scholarship travelled far and wide in search of medicinal plants. He has given description and critical discussion of plants alongwith photographs. The work was published from Calcutta (1936). He has also some other works, Ātmasarvaswa, Laghu Ayurveda Vijñāna, Sidhauṣadhamāṇimālā, to his credit.

Swamiji was born in 1876 in a village of Jaipur district (Rajasthan), studied at Kanpur and worked at Calcutta. His father was Hanuman.

Vanauṣadhi Candrodaya :

A voluminous work in 10 volumes contained description of plants arranged alphabetically. This is composed by Candrarāja Bhaṇḍārī and published from Bhanpura, Indore (1938; 2nd ed. 1945-6).

Dravyaguṇa Vijñānam :

In the fifth decade of this century Ācārya Yādavaji Trikamji of Bombay composed this valuable work which proved to be a developing link between the past and future works. The work is published in two volumes (Vol. I- Baidyanath Ayurveda Bhavan, 3rd ed. 1953; Vol. II, Nirnayasar, Bombay, 2nd ed., 1947-50). He followed

the arrangement of botanical families and included some modern drugs like digitalis.

Acharya Yadavaji was born in 1881 at Porbandar (Gujarat), His father was Vaidya Trikamji Moradhanji who later shifted to Bombay. Yadavaji was educated at Porbandar and Bombay and learnt several languages including Urdu and Bengali. In spite of his active engagement in medical profession, he always devoted his spare time regularly in academic pursuits. He edited a large number of ancient texts and made them available to the Ayurvedic world. He was more than once President of the All India Ayurvedic Congress, Member of the well-known Chopra and Pandit Committees and First Principal of the Ayurvedic College, Banaras Hindu University and Postgraduate Training Centre in Ayurveda at Jamnagar. He revived and initiated the old tradition of Symposia and Seminars in the form of 'Śāstra carcā Pariṣad'. He produced a number of scholars and writers in the field of Ayurveda by his sincere guidance and encouragement. He died in 1956 at Jamnagar.

Dravyaguṇa-Vijñāna :

This work in three volumes by the present author was published in 1955-56 by Chowkhamba Vidyabhavan, Varanasi. For the first time the basic concepts were critically discussed there and drugs were described scientifically according to their actions on different systems of the body. This new approach attracted the students and scholars alike and as such it soon became the only text of choice in the country and abroad. Third edition is coming out very soon. Vol. IV and V are also

planned to be added on Vedic plants and clinical phramacology respectively.

Auṣadhi Vijñāna Śāstra :

Kaviraj Vishwanath Dwivedi (b. 1910), the author of this book, is a well known authority on the subject. He was Professor & Head of the Deptt. of Dravyaguna at the Post-graduate Training Centre at Jamnagar for years. His views on Dravyaguna first became public in the form of a commentary on Bhāvaprakāśa Nighaṇṭu (Motilal Banarasi dass, 1941). Subsequently his other works came out as follows : Kriyātmaka Auṣadhiparicaya-Vijñāna (Chowkhamba, 1966). Ayurveda Kī Auṣadhiyān Aur Unakā Vargīkaraṇa (Jamnagar, 1966).

The present text is published by Shri Baidyanath Ayurveda Bhavan, Nagpur (1970). All these puplications are valuable and interesting readings for the scholars.

Glossary of Vegetable Drugs in Bṛhatrayi :

The author of this work, Thakur Balwant Singh (b. 1-7-1903) has devoted his whole life in the study and search of plants. Although a student of Botany he acquired interest in Ayurvedic Medicinal plants by contact of his colleagues in the Ayurvedic College at Banaras Hindu University. He led excursions to different regions of the country and published several articles and books. His first book 'Vanaṣadhidarśikā' came out in 1947 followed by 'Prārambhika Udbhid Śāstra' (Chowkhamba, 1949) and 'Bihar kī Vansapatiyān' (Baidyanath Ayurveda Bhavan, 1955). The achievements of his lifelong search and study are embodied in the present text (Chowkhamba, 1972). Dr. Krishna Chandra Chuneekar (Lecturer in Dravyaguna, Institute of Medical

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Sciences, Banaras Hindu University) has collaborated in this work.

Other notable authors and workers in this field are :

1. Puruṣottama Shastri — Āyurvedīya Oṣadhi Vijñāna.
Hirlekar
2. P. V. Dhamanakar — Āyurvedīya Auṣadhi Śam-
śodhana. (Nasik, 5th Ed.
1951).
3. Hīramanji Motiramji — Sacitra Vanaspati Guṇādarśa
Jangale Vol. I-II (Baghali, Maha-
rastra).
4. Gaṅgadhara Shastri — Āyurvedīya Auṣadhi Guṇa-
Guṇe dharma Śāstra, Vol. I-IV
(Ahmednagar).
5. Shankaradatta Gauḍa — Śaṅkara Nighaṇṭu (Jabal-
pur, 1935).
6. Datta Ram Chaube — Abhinava Nighaṇṭu.
7. Baldeva Prasad Mishra — Āyurveda Cintāmaṇi
(Bombay, 1937).
8. Antubhai Vaidya — Vanaspati-Paricaya
(Bombay, 1952).
9. Daljit Singh — Yūnāni Dravyaguṇā Vijñāna
(1949). Yūnāni Dravya-
guṇādarśa- Vol. I-II (Luck-
now, 1972-74.)
10. Mahendar Kumar — Laghu Dravyaguṇādarśa-
Shastri Sacitra (Bombay, 2nd ed.,
1957).
11. Ramesh Bedi — A Large number of tracts on
single drugs.

Home Remedies

There is a good deal of literature on home remedies which are used traditionally in villages. These books are known by the titles 'Būṭi Pracāra', 'Ṭoṭakā cikitsā', 'Auśadhi-Śataka', 'Gr̥hadravyacikitsā' etc. Vaidya Ramnath, Professor at Gurukul Kangri has published some good books. Some other names known in this field are Harinarayan Sharma, Ram Lagan Pandeya, Umedilal Vaiśya, Kedarnath Pathak, Gaṇapati Singh Verma, Ram Sanehi Dikshit and Amolchandra Shukla. Krishna Gopal Pharmacy (Ajmer) has also published some popular volumes on this topic. Pt. Candrashekhar Dhara Sharma (Champanan, Bihar) was well-known for his devotion to and publication on 'Gūlar' entitled 'Gūlara Guṇavikāśa' (Chowkhamba, 15th. ed., 1965). The latest book is 'Tulasī' from Pt. Brahmadaṭṭa Sharma (Dabur, 1975).

Works by modern authors (Non-Vaidyas)

Valuable works have been published on Indian Medicinal plants by the scholars and Botanists interested in this field. The following are important ones :-

1. Wealth of India (Raw material) - Vol. I - IX
(C. S. I. R., Delhi.)
2. K. M. Nadkarni : Indian Materia Medica
(Bombay, 3rd. ed. 1954.)
3. Kalipada Biswas : Bhāratīya Vanaūśadhi
(Calcutta 1950.)
4. R. N. Chopra : Indigenous Drugs of India
(Calcutta, 1958, 2nd. ed.)
5. Chopra, Badhwar and Ghosh : Poisonous Plants of India (I. C. A. R., Delhi, 1949.)

6. Chopra, Nayar & Chopra : Glossary of Indian Medicinal Plants (C. S. I. R., Delhi, 1956.)
7. Chopra, Chopra & Verma : Supplement to the glossary of Indian Medicinal Plants (Delhi, 1969.)
8. Bhimacandra Chatterji : Economic Botany of India.
9. K. R. Kirtikar & B.D. Basu : Indian Medicinal Plants Vol. I - IV (Allahabad, 1918; 2nd ed. 1933.)
10. H. V. Savnur : A Handbook of Ayurvedic Materia Medica (Belgaon, 1950.)
11. K. C. Bose : Pharmacopoea Indica (1932.)
12. George Watt : Dictionary of Economic Products of India, (London, 1889-93, 1908, Rep. 1972.)
13. Moodeen Sheriff : Supplement to Pharmacopoea Medica.
14. Dymock : Pharmacographia Indica (Bombay, 1883; London 1889-93.)
15. Dymock : The Vegetable Materia Medica of Western India (Bombay, 1883.)
16. Roxburgh : Flora Indica (1832-1874.)
17. Ainslie : Materia Medica of Hindustan (Madras, 1813; 2nd ed. London, 1826).
18. Kanailal Dey : Indigenous Drugs of India (1896.)
19. R. N. Khowry : Materia Medica of India and their therapeutics.
20. U. C. Dutt : Materia Medica of the Hindus (2nd ed. 1922.)
21. Sakharam Arjun : Bombay Drugs (Bombay, 1879.)

Flora

Flora of India and its different regions have been published. 'Flora of British India' (Hooker) and Flora Indica (Roxburgh & Wallich) are important publications on Indian flora. Among regional Flora the works of Haines, Duthie, Kanjilal, Cook, Brandis, Maheswari etc. are well-known. Balwant Singh has published reports on the survey of Himalayan region and Bihar. Maya Ram Uniyal has prepared a report on the Himalayan plants and Ramesh Bedi has done informative work on plants of Bhutan.

Research Publications :

On establishment of the separate departments of Pharmacology in Medical Colleges, Research work on Indian Medicinal Plants and drugs started in right earnest. Chopra, Mukerji, Bose and Gujral have done valuable work in investigating the plant material on modern scientific methods. In recent years, Dr. R. B. Arora has published important papers and Monographs. The following publications are also noteworthy.

1. K. Narayan Iyer et al. - Pharmacognosy of Indian Medicinal Plants Vol. I-IX (Trivendrum, 1951-66).
2. Mehra, Bhatnagar & Handa - Resarches in Pharmacognosy in India (Chandigarh, 1970)
3. Godbole, Pendse & Bedeker - Glossary of vegetable drugs in Vagbhata (Poona, 1966).
4. Kamat & Mahajan - Medicinal Plants in Dhanwantāriya Nighaṇṭu (Poona, 1972).

5. K. C. Chunekar : — Vānaspatika Anusandhāna:
darśikā (Chowkhamba, 1969)

Ayurvedic Journals like Dhanwantari, Sacitra Ayurveda etc. have published special numbers on Medicinal Plants which contain relevant material.

Other Accessory Material

A. Commentaries :

The commentaries on ancient and Medieval Texts contain valuable information on drugs and their substitutes. Commentators tried to describe the drug by way of morphological characters and local names and they also mentioned the substitute if the drug was controversial. Dalhana, the commentator on Suśruta Samhita stands topmost in this respect. It will be an interesting study if the descriptions or explanations given by commentators are collected and analysed in case of each drug to arrive at a correct picture of its position in different periods.¹

B. Dravyagūṇa in Non-medical literature :

The material of Dravyagūṇa, as it is scattered, can be collected also from the non-Medical literature. Valuable

¹ The following papers may be seen :

P. V. Sharma and G. P. Sharma : Jejjata (9th Cent. A. D.) and his information about Indian Drugs, I. J. H. S., Vol. 7, No. 2, 1972.

Idem : Son's commentary on Father's work; I. J. R. I. M., Vol. VI, No. 3, 1971.

Idem : Son's commentary on Father's work II, J. R. I. M., Vol. II, No. 3, 1972.

G. P. Sharma & P. V. Sharma : Śivādāsa Sen-A scholar commentator on Indian Medicine of later medieval Period (15th Cent. A. D.), I. J. H. S., Vol. VI, No. 2, 1971.

informations regarding drugs are found in Vedic literature, Purāṇas, Smṛtis, Buddhist scripture, Jātakas, Jain scriptures, Great Epics (Ramayana and Mahābhārat) etc.¹

¹ Following Publications may be seen :

Bapalal : Samskrit Sāhitya Men Vanasapati (Ahemdabad, 1953).

P. V. Sharma : Amarkoṣa kā Vanaūṣadhi Varga, Sachitra Ayurveda. November, 1974.

Idem : Indian Medicine in the classical age (Chowkhamba, 1972).

B. C. Law : Ancient Indian Flora, Indian Culture, Vol. XV, Nos. 1-4 July 1948-June 1949.

Jyotirmitra : Medicinal Plants of the Ramayana of Vālmīki, Nagarjuna, Feb. 1969.

References

1. Caraka Saṁhitā — Su. 1-4, 13, 22, 25-27.
(with com. of Vi. 1, 8
Cakrapaṇi) Ch. 1-2, 30
Ka. 1-12
2. Suśruta Saṁhitā — Su. 1, 11, 36-46
(with com. of Dalhaṇa) 5 (49-54), 6 (14-17),
10, 13, 26, 27-31
Ka. 1
3. Aṣṭāṅga Saṁgraha, — Su. 1, 6-10, 12-18, 23, 25-33
Ka. 1-8
Ut. 40, 48-50
4. Aṣṭāṅga Hṛdaya — Su. 1, 5-6, 9-10,
(with com. of Ka. 1-2,
Aruna Datta and Ut. 35, 39-40
Hemadri)
5. Bhela Saṁhitā — Su. 12, 27, 28,
Vi. 1.
Ka. 1-9
6. Kaśyapa Saṁhitā — Su. 22,
Ka. 4-10
7. Śārṅgadhara — Pt I-Ch. 1-2, 4
Saṁhitā Pt II-Ch. 1-12
Pt III-Ch. 4, 8-11, 13
8. Bhāva Prakāśa—Miśra Varga, Nighaṇṭu
9. Dhanwantari Nighaṇṭu
10. Rāja Nighaṇṭu

11. Kaiyadeva Nighaṇṭu
12. Aṣṭāṅga Nighaṇṭu
13. Glossary of Vegetable Drugs in Bṛhatrayi—B. Singh
& K. C. Chunekar.
14. Indigenous Drugs of India—R. N. Chopra.
15. Glossary of Indigenous Drugs—R. N. Chopra et al.
16. Indian Materia Medica—K. M. Nadkarni.
17. Indian Medicine in the Classical Age—P.V. Sharma.

Su.	=	Sūtra Sthāna
Vi.	=	Vimāna Sthāna
Ch.	=	Chikitsā Sthāna
Ka.	=	Kalpa Sthāna
Ut.	=	Uttara Sthāna

Appendix I

List of Drugs under the Mahākaśāya groups of Caraka

- | | |
|------------------------------|----------------------------|
| (1) <i>Jīvaṇīya</i> | 8. Bhāradwājī |
| 1. Jīvaka ¹ | 9. Payasyā (Kṣīravidārī) |
| 2. Ṛṣabhaka | 10. Ṛṣyagandhā (Atibalā) |
| 3. Medā | (3) <i>Lekhanīya</i> |
| 4. Mahāmedā | 1. Musta |
| 5. Kākoli | 2. Kuṣṭha |
| 6. Kṣīra Kākoli ² | 3. Haridrā |
| 7. Mudgaparnī | 4. Dāru Haridrā |
| 8. Māṣaparnī | 5. Vacā |
| 9. Jīvanti | 6. Ativiṣā |
| 10. Madhuka (Madhuyaṣṭī) | 7. Kaṭurohiṇī (Kaṭukā) |
| (2) <i>Bṛmhaṇīya</i> | 8. Citraka |
| 1. Kṣīriṇī | 9. Cīrabilwa |
| 2. Rājakaśavaka (Dugdhikā) | 10. Haimavati |
| 3. Aśwagandhā | (4) <i>Bhedanīya</i> |
| 4. Kākoli | 1. Suvahā (Trivṛt) |
| 5. Kṣīrakākoli | 2. Arka |
| 6. Vāṭyāyanī (Balā) | 3. Urubūka (Eraṇḍa) |
| 7. Bhadrāudanī | 4. Agnimukhī (Lāṅgalī) |
| (Nāgabalā) | 5. Citrā (Dantī) |

¹ For botanical names of the plants see appendix III.

² These six alongwith Ṛddhi and Vṛddhi constitute a group known as Aṣṭavarga (A group of eight drugs). Bhāva Miśra has recommended Vidārī, Śatāvārī, Aśwagandhā and Vārāhī as substitutes for each of the four pairs respectively. Jīvaṇīya gaṇa of the Bhāvaprakāśa consists of Aṣṭavarga and the last four drugs (7-10) of this group. It is not known why Caraka has left Ṛddhi and Vṛddhi here. May be due to limitation of number (10).

6. Citraka
7. Cirabilwa
8. Śaṅkhinī (Aparajitā)
9. Śakulādani (Kaṭukā)
10. Swarnaṅkṣirīṇī

(5) *Sandhānīya*

1. Madhuka (Madhuyaṣṭī)
2. Madhuparnī (Guḍūci)
3. Prṣniparnī
4. Ambaṣṭhakī (Pāthā)
5. Samaṅgā (Lajjālu)
6. Mocarasa
(Śālmali-Niryāsa)
7. Dhātakī
8. Lodhra
9. Priyaṅgu
10. Kaṭphala

(6) *Dīpanīya*

1. Pippalī
2. Pippalīmūla
3. Cavya
4. Citraka
5. Śṛṅgavera (Śuṅṭhī)
6. Amlavetasa
7. Marica
8. Ajamodā
9. Bhallātakāsthī
10. Hiṅgu Niryāsa

(7) *Balya*

1. Aindrī (?)
2. Rṣabhi (Kapikacchu)

3. Atirasā (Śatāvarī)
4. Rṣyaproktā (?)
5. Payasyā (Kṣīravidārī)
6. Aśwagandhā
7. Sthirā (Śālaparnī)
8. Rohiṇī (?)
9. Balā
10. Atibalā

(8) *Varṇya*

1. Candana
2. Tunga (Punnāga)
3. Padmaka
4. Uśīra
5. Madhuka (Madhuyaṣṭī)
6. Mañjiṣṭhā
7. Sārivā
8. Payasyā (Kṣīravidārī)
9. Sitā (Dūrvā)
10. Latā (Priyaṅgu)

(9) *Kaṇṭhya*

1. Sārivā
2. Ikṣumūla
3. Madhuka (Madhuyaṣṭī)
4. Pippalī
5. Drākṣā
6. Vidārī
7. Kaiṭarya (Kaṭphala)
8. Haṁspadi
9. Bṛhati
10. Kaṇṭakārikā

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(10) *Hṛdya*

1. Āmra
2. Āmrātaka
3. Lakuca
4. Karamarda
5. Vṛkṣāmla
6. Amlavetasa
7. Kuvala
8. Badara
9. Dāḍima
10. Mātuluṅga

(11) *Trptighna*

1. Nāgara (Śuṇṭhī)
2. Cavya
3. Citraka
4. Viḍaṅga
5. Mūrvā
6. Guḍūci
7. Vacā
8. Musta
9. Pippali
10. Paṭola

(12) *Arśoghna*

1. Kuṭaja
2. Bilwa
3. Citraka
4. Nāgara (Śuṇṭhī)
5. Ativiṣā
6. Abhayā (Harītakī)
7. Dhanvayāsaka
8. Dāru Haridrā

9. Vacā

10. Cavya

(13) *Kuṣṭhaghna*

1. Khadira
2. Abhayā (Harītakī)
3. Āmalaka
4. Haridrā
5. Aruṣkara (Bhallātaka)
6. Saptaparnā
7. Āragwadha
8. Karavīra
9. Viḍaṅga
10. Jāti (Patra)

(14) *Kaṇḍūghna*

1. Candana
2. Nalada (Uśīra)
3. Kṛtamāla (Āragwadha)
4. Naktamāla (Karañja)
5. Nimba
6. Kuṭaja
7. Sarṣapa
8. Madhuka (Madhuyasṭī)
9. Dāruharidrā
10. Musta

(15) *Krimighna*

1. Akṣīva (Śigru)
2. Marica
3. Gaṇḍīra (Kāṇḍīra)
4. Kebuka
5. Viḍaṅga
6. Nirguṇḍī

- | | |
|----------------------------|-----------------|
| 7. Kiṇihī (Śweta śirīṣa) | 4. Musta |
| 8. Śwadamṣṭrā (Gokṣura) | 5. Mūrvā |
| 9. Vṛṣaparnikā (?) | 6. Guḍūci |
| 10. Ākhuparnikā | 7. Vatsakaphala |
| (Mūṣākarnī) | (Indrayava) |

(16) *Viṣaghna*

1. Haridrā
2. Mañjiṣṭhā
3. Suvahā (Trivṛt)

4. Sūkṣma Elā
5. Pāḷindī (Kṛṣṇa Sārivā)
6. Candana
7. Kataka
8. Śirīṣa
9. Sindhuvāra
10. Sleşmātaka

(17) *Stanya-janana*

1. Viraṇa (uśira)
2. Śāli
3. Ṣaṣṭika
4. Ikṣuvālikā (?)

5. Darbha
6. Kuśa
7. Kāśa
8. Gundra
9. Itkaṭa

10. Kattrṇamūla

(18) *Stanya-śodhana*

1. Pāṭhā
2. Mahauṣadha (Śuṇṭhī)
3. Suradāru (Devadāru)

8. Kirātatikta

9. Kaṭurohiṇī

10. Sārivā

(19) *Śukra-janana*

1. Jivaka
2. Rṣabhaka
3. Kākoli
4. Kṣīrakākoli
5. Mudgaparnī
6. Māṣaparnī
7. Medā
8. Vṛddharuhā (Śatāvarī)
9. Jaṭilā (Uccaṭā bheda)
10. Kulingā (Uccaṭā)

(20) *Śukra-śodhana*

1. Kuṣṭha
2. Elavāluka
3. Kaṭphala
4. Samudraphena
5. Kadambaniryāsa
6. Ikṣu
7. Kāṇḍekṣu (Ikṣu-bheda)
8. Ikṣuraka
9. Vasuka
10. Uśira

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{ 21 } *Snehopaga*

1. Mṛdwikā (Drākṣā)
2. Madhuka (Madhuyaṣṭi)
3. Madhuparnī (Guḍūci)
4. Medā
5. Vidārī
6. Kākoli
7. Kṣīrakākoli
8. Jīvaka
9. Jīvantī
10. Śālaparnī

{ 22 } *Swedopaga*

1. Śobhāñjanaka (Śigru)
2. Eraṇḍa
3. Arka
4. Vṛṣcīra (Varṣābhū)
5. Punarnavā
6. Yava
7. Tila
8. Kulattha
9. Māṣa
10. Badara

{ 23 } *Vamanopaga*

1. Madhu
2. Madhuka (Madhuyaṣṭi)
3. Kovidāra
4. Karbudāra
5. Nīpa
6. Vidula (Hijjala)
7. Bimbī
8. Śaṇapuṣpī
9. Sadāpuṣpī (Arka)

10. Pratyakpuṣpī

(Apāmārga)

{ 24 } *Virecanopaga*

1. Drākṣā
2. Kāśmarya
3. Parūṣaka
4. Abhayā (Haritaki)
5. Āmalaka
6. Bibhītaka
7. Kuvala
8. Badara
9. Karkandhu
10. Pīlu

{ 25 } *Āsthāpanopaga*

1. Trivṛt
 2. Bilwa
 3. Pippali
 4. Kuṣṭha
 5. Sarṣapa
 6. Vacā
 7. Vatsakaphala
- (Indrayava)

8. Śatapušpā
9. Madhuka (Madhuyaṣṭi)
10. Madanaphala

{ 26 } *Anuvāsopaga*

1. Rāsnā
2. Suradāru (Devadāru)
3. Bilwa
4. Madanaphala
5. Śatapušpā

6. Vṛścīra (Varṣābhū)
7. Punarnavā
8. Swadamṣṭrā (Gokṣura)
9. Agnimantha
10. Śyonāka

(27) *Śirovirecanopaga*

1. Jyotiṣmatī
2. Kṣavaka
3. Marica
4. Pippalī
5. Viḍaṅga
6. Śigru
7. Sarṣapa
8. Apāmārga tandula
9. Śwetā (Aparājitā)
10. Mahaśwetā
(Śweta śirīṣa)

(28) *Chardi-nigrahana*

1. Jambū Pallava
2. Āmrappallava
3. Mātuluṅga
4. Amla Badara
5. Dāḍima
6. Yava
7. Ṣaṣṭika
8. Uśīra
9. Mṛt
10. Lājā

(29) *Trṣṇā-nigrahana*

1. Nāgara (Śuṇṭhī)
2. Dhinvayāsaka

3. Musta
4. Parpaṭaka
5. Candana
6. Kirātatikta
7. Gudūcī
8. Hribera
9. Dhānyaka
10. Paṭola

(30) *Hikkā-nigrahana*

1. Śaṭī
2. Puṣkaramūla
3. Badarabīja
4. Kaṇṭakārikā
5. Bṛhati
6. Vṛkṣaruhā (Vandāka)
7. Abhayā (Harītaki)
8. Pippali
9. Durālabhā
(Dhanvayāsa)
10. Kulīraśṛṅgi
(Karakaṭaśṛṅgi)

(31) *Purīṣa-saṁgrahaṇīya*

1. Priyaṅgu
2. Anantā (Sārivā)
3. Āmrāsthī
4. Kaṭwaṅga (Aralu)
5. Lodhra
6. Mocarasa
7. Samaṅgā (Lajjālu)
8. Dhātakīpuṣpa
9. Padmā (Bhārṅgi)

10. Padma (Kamala)
Keśara

(32) *Purīṣa-virajāṇīya*

1. Jambū twak
2. Śallakī twak
3. Kacchurā
(Dhanvayāsa)
4. Madhuka
(Madhuyaṣṭī)
5. Śālmali
6. Śrīveṣṭaka
(Sarala-niryāsa)
7. Bhṛṣṭamṛt
8. Payasyā (Kṣīraavidārī)
9. Utpala
10. Tila

(33) *Mūtra-saṅgrahaṇīya*

1. Jambū
2. Āmra
3. Plakṣa
4. Vaṭa
5. Kapītana
6. Udumbara
7. Aśwattha
8. Bhallātaka
9. Aśmantaka
10. Somavalka
(Kaṭphala)

(34) *Mūtra-virajāṇīya*

1. Padma (Kamala)

2. Nalina

3. Saugāndhikā

4. Puṇḍarika

5. Śatapatra

6. Utpala

7. Kumuda¹

8. Madhuka

- (Madhuyaṣṭī)

9. Priyaṅgu

10. Dhātakīpuṣpa

(35) *Mūtra-virecaṇīya*

1. Vṛkṣādani (Vandāka)

2. Śwadaṁṣṭrā (Gokṣura)

3. Vasuka

4. Vaśira (Apāmārga)

5. Pāṣāṇabheda

6. Darbha

7. Kuśa

8. Kāśa

9. Gundra

10. Itkaṭa

(36) *Kāsa-hara*

1. Drākṣā

2. Abhayā (Haritaki)

3. Āmalaka

4. Pippali

5. Duralabhā

- (Dhanvayāsa)

6. Śṛṅgi (Karkāṭa Śṛṅgi)

1 1-5 varieties of Kamala & 6-7 varieties of Kumuda.

7. Kaṇṭakārikā
8. Vṛścīra (Varṣābhū)
9. Punarnavā
10. Tāmalakī
(Bhūmyāmalakī)

(37) *Swāsa-hara*

1. Śaṭī
2. Puṣkaramūla
3. Amlavetasa
4. Elā
5. Hingu
6. Aguru
7. Surasā (Tulasī)
8. Tāmalakī
(Bhūmyāmalakī)
9. Jīvanti
10. Caṇḍā

(38) *Śwayathu-hara*

1. Pāṭalā
2. Agnimantha
3. Śyonāka
4. Bilwa
5. Kāśmarya
6. Kaṇṭakārikā
7. Br̥hati
8. Śālaparṇī
9. Pr̥śniparṇī
10. Gokṣura

(39) *Jwara-hara*

1. Sārivā
2. Śarkarā

3. Pāthā
4. Mañjiṣṭhā
5. Drākṣā
6. Pīlu
7. Parūṣaka
8. Abhayā (Haritaki)
9. Āmalaka
10. Bibhītaka

(40) *Śrama-hara*

1. Drākṣā
2. Kharjūra
3. Priyāla
4. Badara
5. Dāḍima
6. Phalgu
7. Parūṣaka
8. Ikṣu
9. Yava
10. Śaṣṭika

(41) *Dāha-Praśamana*

1. Lājā
2. Candana
3. Kāśmaryaphala
4. Madhuka
(Madhuyasṭī)
5. Śarkarā
6. Utpala (Nīla)
7. Uśīra
8. Sārivā
9. Guḍūcī
10. Hribēra

(42) *Śīta-praśamana*

1. Tagara
2. Aguru
3. Dhānyaka
4. Śrṅgavera (Śuṇṭhī)
5. Bhūtika (Rohiṣa)
6. Vacā
7. Kaṇṭakārī
8. Agnimantha
9. Śyonāka
10. Pippali

(43) *Udarda-praśamana*

1. Tinduka
2. Priyāla
3. Badara
4. Khadira
5. Kadara
6. Arimeda
7. Saptaparna
8. Aśwakarna
9. Arjuna
10. Asana

(44) *Aṅgamarda-Praśamana*

1. Vidārigandhā
(Śālaparnī)
2. Pṛśniparnī
3. Bṛhatī
4. Kaṇṭakārikā
5. Eraṇḍa
6. Kākoli
7. Candana
8. Uśīra

9. Elā

10. Madhuka
(Madhuyaṣṭī)

(45) *Śūla-prasamana*

1. Pippali
2. Pippalimūla
3. Cavya
4. Citraka
5. Śrṅgavera (Śuṇṭhī)
6. Marica
7. Ajamodā
8. Ajagandhā (Barbarī)
9. Ajājī (Jiraka)
10. Gaṇḍīra (Kāṇḍīra)

(46) *Śoṇita-sthāpana*

1. Madhu
2. Madhuka
(Madhuyaṣṭī)
3. Rudhira (Kuṅkuma)
4. Mocarasa
5. Mṛtkapāla
6. Lodhra
7. Gairika
8. Priyaṅgu
9. Śarkarā
10. Lājā

(47) *Vedanā-sthāpana*

1. Śāla
2. Kaṭphala
3. Kadamba
4. Padmaka

5. Tumba (Alābu)
6. Mocarasa
7. Śirīṣa
8. Vañjula (Jalavetasa)
9. Elavāluka
10. Aśoka

(48) *Sañjñā-sthāpana*

1. Hiṅgu
2. Kaiṭarya (Kaṭphala)
3. Arimeda
4. Vacā
5. Coraka
6. Vayaḥsthā (Brāhmī)
7. Golomī (Bhūtakeśī)
8. Jaṭilā (Jaṭāmāṁsī)
9. Palaṅkaṣā (Guggulu)
10. Aśokarohiṇī (Kaṭukā)

(49) *Prajā-sthāpana*

1. Aindrī (?)
2. Brāhmī

3. Śatavīryā (Śatāvarī)
4. Sahasravīryā
(Śatāvarī-bheda)
5. Amoghā (Lakṣmaṇā)
6. Avyathā (Harītakī)
7. Śivā (Dūrva)
8. Ariṣṭā (Nāgabalā)
9. Vāṭyapuṣpī (Balā)
10. Viśwaksenakāntā
(Priyaṅgu)

(50) *Vayaḥ-sthāpana*

1. Amṛtā (Guḍūcī)
2. Abhayā (Harītakī)
3. Dhātrī (Āmalakī)
4. Yuktā (Rāsnā)
5. Śwetā (Aparājitā)
6. Jīvantī
7. Atirasā (Śatāvarī)
8. Maṇḍūkapaṇṇī
9. Sthirā (Śālapaṇṇī)
10. Punarnavā

Appendix II

List of Drugs under Gaṇas of Suśruta

- | | |
|-------------------------------|----------------------------|
| (1) <i>Vidārigandhādi</i> | 2. Madana |
| 1. Vidārigandhā | 3. Gopaghonṭā |
| (Śālaparnī) ¹ | 4. Kuṭaja |
| 2. Vidāri | 5. Pāṭhā |
| 3. Sahadevā (Atibalā) | 6. Kaṇṭakī |
| 4. Viśwadevā (Nāgabālā) | 7. Pāṭalā |
| 5. Śwadaṁṣṭrā (Gokṣura) | 8. Mūrvā |
| 6. Pṛthakparṇī (Pṛṣniparnī) | 9. Indrayava |
| 7. Śatāvārī | 10. Saptaparnā |
| 8. Sārivā | 11. Nimba |
| 9. Kṛṣṇa Sārivā | 12. Kurunṭaka |
| 10. Jiraka | 13. Dāsī Kurunṭaka |
| 11. Rṣabhaka | 14. Guḍūci |
| 12. Mahāsahā (Māṣaparnī) | 15. Citraka |
| 13. Kṣudra Sahā | 16. Śārṅgeṣṭā |
| (Mudgaparnī) | 17. Karañja-dwaya |
| 14. Brhati | 18. Pūtika (Cirabilwa) |
| 15. Kaṇṭakārī | 19. Paṭola |
| 16. Punarnavā | 20. Kīrātatikta |
| 17. Eraṇḍa | 21. Suṣavī (Kāravellaka) |
| 18. Haṁsapādi | (3) <i>Varuṇādi</i> |
| 19. Vṛścikālī | 1. Varuṇa |
| 20. Rṣabhī (Kapikacchū) | 2. Ārtagaḍa |
| (2) <i>Āragwadhādi</i> | 3. Śigru |
| 1. Āragwadha | 4. Madhu śigru |

1. For botanical names of the plants see appendix III.

- | | |
|---|--------------------------------------|
| 5. Tarkārī | 12. Vasuka |
| 6. Meṣaśṛṅgī | 13. Vaśira |
| 7. Pūtika | 14. Bhallūka (Śyonāka) |
| 8. Naktamāla | 15. Kuraṇṭikā |
| 9. Moraṭa | 16. Indīvara (Kuraṇṭikā-
bheda) |
| 10. Agnimantha | 17. Kapotavaṇikā (?) |
| 11. Saireyaka-dwaya
(Pita-Nīla) | 18. Śwadamīṣṭrā
(Gokṣura) |
| 12. Bimbī | (5) <i>Sālasārādi</i> |
| 13. Vasuka | 1. Sālasāra (Śāla) |
| 14. Vaśira (Apāmārga) | 2. Ajakarna |
| 15. Citraka | 3. Khadira |
| 16. Śatāvarī | 4. Kadara |
| 17. Bilwa | 5. Kālaskandha
(Arimeda) |
| 18. Ajaśṛṅgī (meṣaśṛṅgī) | 6. Kramuka (lodhra) |
| 19. Darbha | 7. Bhūrja |
| 20. Br̥hatī | 8. Meṣaśṛṅgī |
| 21. Kaṇṭakārī | 9. Tiniśa |
| (4) <i>Viratarwādi</i> | 10. Candana |
| 1. Virataru | 11. Rakta candana |
| 2. Sahacara-dwaya
(Saireyaka, Pita and Nila) | 12. Śimśapā |
| 3. Darbha | 13. Śirīṣa |
| 4. Vṛkṣādānī (Vandāka) | 14. Asana |
| 5. Gundra | 15. Dhava |
| 6. Nala | 16. Arjuna |
| 7. Kuśa | 17. Tāla |
| 8. Kāśa | 18. Śāka |
| 9. Aśmabhedaka
(Pāśāṇabheda) | 19. Naktamāla (Karañja) |
| 10. Agnimantha | 20. Pūtika (cirabilwa) |
| 11. Moraṭa | 21. Aśwakarna |

22. Aguru

23. Kāliyaka

(6) *Rodhrādi*

1. Rodhra (Lodhra)

2. Śābara Rodhra

3. Palāśa

4. Kuṭannaṭa (Śyonākā)

5. Aśoka

6. Phaṇji

7. Kaṭphala

8. Elavāluka

9. Śallakī

10. Jīngiṇī

11. Kadamba

12. Śāla

13. Kadali

(7) *Arkādi*

1. Arka

2. Alarka

3. Karaṇja-dwaya

4. Pūtika (cirabilwa)

5. Nāgadanti

6. Māyūraka (Apāmārga)

7. Bhārṅgī

8. Rāsnā

9. Indrapuṣpī (?)

10. Kṣudraśwetā

(Aparājītā)

11. Mahāśwetā

(śweta śīriṣa)

12. Vṛscikālī

13. Alavaṇā (Jyotiṣmatī)

14. Tāpasa Vṛkṣa

(Īngudī)

(8) *Surasādi*

1. Surasā (Tulasī)

2. Śweta Surasā

3. Phaṇijhaka

(Maruvaka)

4. Arjaka

5. Bhūstrṇa (Rohiṣa)

6. Sugandhaka

(Gandhatṛṇa)

7. Sumukha (Rājikā)

8. Kālamala (Barbarī)

9. Kāsamarda

10. Kṣavaka

11. Kharapuspā (?)

12. Viṇṅga

13. Kaṭphala

14. Surasī

15. Nirguṇḍī

16. Kulāhala (Muṇḍī)

17. Undurukarṇikā

(Muṣākarnī)

18. Phaṇji

19. Prācibala

(Kākajaṅghā)

20. Kākamācī

21. Viṣamuṣṭika

(Mahānimba)

(9) *Muṣkakādi*

1. Muṣkaka

- (10) 2. Palāśa
 3. Dhava
 4. Citraka
 5. Madana
 6. Vṛkṣaka (kuṭaja)
 7. Simśapā
 8. Vajravṛkṣa (Snuhi)
 9. Triphalā

- (10) Pippalyādi
 1. Pippalī
 2. pippalimūla
 3. Cavya
 4. Citraka
 5. Śuṇṭhī
 6. Marica
 7. Gajapippalī
 8. Hareṇuka
 9. Elā (Sūkṣma elā)
 10. Ajmodā
 11. Indrayava
 (kuṭaja-bīja)
 12. Pāṭhā
 13. Jiraka
 14. Sarṣapa
 15. Mahānimba phala
 16. Hingu
 17. Bhārṅgi
 18. Madhurasā (Mūrvā)
 19. Ativiṣā
 20. Vacā
 21. Viḍaṅga
 22. Kaṭurohinī (Kaṭukā)

- (11) Elādi
 1. Elā (sūkṣma)
 2. Tagara
 3. Kuṣṭha
 4. Jatāmānsī
 5. Dhyāmaka (Rohiṣa)
 6. Twak
 7. Patra
 8. Nāgapuṣpa
 (Nāgakeśara)
 9. Priyaṅgu
 10. Hareṇuka
 11. Vyāghranakha
 12. Śukti (Nakha)
 13. Caṇḍā
 14. Sthaṇḍeyaka
 15. Śrīveṣṭaka
 16. Coca
 17. Coraka
 18. Elavāluka
 19. Guggulu
 20. Sarjarasa
 21. Turuṣka
 22. Kunduruka
 (Śallāki-niryāsa)
 23. Aguru
 24. Sprkkā
 25. Uśīra
 26. Bhadrādāru
 (Devadāru)
 27. Kuṅkuma
 28. Punnāga-keśara

(169)

(12) *Vacādi*

1. Vacā
2. Musta
3. Ativiṣā
4. Abhayā (Haritakī)
5. Bhadrādāru
(devadāru)
6. Nāgakeśara

(13) *Haridrādi*

1. Haridrā
2. Dāru Haridrā
3. Kalaśi (Prṣniparnī)
4. Kuṭajabīja
(Indrayava)
5. Madhuka
(Madhuyaṣṭī)

(14) *Śyāmādi*

1. Śyāmā (Trivṛt)
2. Mahāśyāmā
(Vṛddhadāru)
3. Trivṛt
4. Dantī
5. Śaṅkhinī (Aparājītā)
6. Tilwaka
7. Kampillaka
8. Ramyaka
(Mahānimba)
9. Kramuka (Pūga)
10. Putraśreṇī (Dravantī)
11. Gavākṣī (Indravāruṇī)
12. Rājavarṣa
(Āragwadha)

13. Karañja

14. Pūtika
15. Guḍūcī (Cirabilwa)
16. Saptalā
17. Chagalāntrī
18. Sudhā (snuhī)
19. Suvarṇakṣirī

(15) *Bṛhatyādi*

1. Bṛhatī
2. Kaṇṭakārī
3. Kuṭajaphala
(Indrayava)
4. Pāṭhā
5. Madhuka
(Madhuyaṣṭī)

(16) *Paṭolādi*

1. Paṭola
2. Candana
3. Kucandana (Rakta-
candana)
4. Mūrvā
5. Guḍūcī
6. Pāṭhā
6. Kaṭurohinī (Kaṭukā)

(17) *Kākolyādi*

1. Kākoli
2. Kṣīrakākoli
3. Jivaka
4. Rṣabhaka
5. Mudgaparnī
6. Māṣaparnī

- | | |
|--------------------------|---------------------------|
| 7. Medā | (20) <i>Añjanādi</i> |
| 8. Mahāmedā | 1, Añjana |
| 9. Chinnaruhā (Guḍūci) | 2. Rasāñjana |
| 10. Karkaṭa śṛṅgī | 4. Nāgapuṣpa |
| 11. Tugākṣirī | (Nāgakeśara) |
| (varṁśalocana) | 4. Priyaṅgu |
| 12. Padmaka | 5. Utpala (Nīla) |
| 13. Prapaundarika (?) | 6. Nalada (Uśira) |
| 14. Ṛddhi | 7. Nalina (Kamala) |
| 15. Vṛddhi | Keśara |
| 16. Mṛdwikā (Drākṣā) | 8. Madhuka (Madhuyaṣṭi) |
| 17. Jīvantī | (21) <i>Parūṣakādi</i> |
| 18. Madhuka | 1. Parūṣaka |
| (Madhuyaṣṭi) | 2. Drākṣā |
| (18) <i>Uṣakādi</i> | 3. Kaṭphala |
| 1. Uṣaka | 4. Dāḍima |
| 2. Saindhava | 5. Rājādana (Kṣīriṇi) |
| 3. Śilājatu | 6. Katakaphala |
| 4. Kāsisa-dwaya | 7. Śākaphala |
| 5. Hīngu | 8. Triphalā |
| 6. Tutthaka | (22) <i>Priyaṅgwādi</i> |
| (19) <i>Sārivādi</i> | 1. Priyaṅgu |
| 1. Sārivā | 2. Samaṅgā (Lajjālu) |
| 2. Madhuka | 3. Dhātakī |
| (Madhuyaṣṭi) | 4. Punnāga |
| 3. Candana | 5. Nāgapuṣpa |
| 4. Kucandana | (Nāgakeśara) |
| (Raktacandana) | 6. Candana |
| 5. Padmaka | 7. Kucandana |
| 6. Kāśmaryaphala | (Raktacandana) |
| 7. Madhūkapuṣpa | 8. Nāgakeśara |
| 8. Uśira | (Mocarasa) |

9. Rasāñjana
10. Kumbhika
11. Srotoñjana
12. Padma (kamala)
keśara
13. Yojanavalli
(Mañjiṣṭhā)
14. Dīrghamūlā
(Dhanvayāsa)
- (23) *Ambaṣṭhādi*
 1. Ambaṣṭhā (mācikā)
 2. Dhātakī kusuma
 3. Samaṅgā (Lujjālu)
 4. Kaṭwaṅga (Aralu)
 5. Madhuka
(Madhuyaṣṭi)
 6. Bilwapeśikā
 7. Sābara Rodhara
 8. Palāsa
 9. Nandivṛkṣa
 10. Padma (kamala)
keśara
- (24) *Nyagrodhādi*
 1. Nyagrodha
 2. Udumbara
 3. Aśwattha
 4. Plakṣa
 5. Madhūka
 6. Kapītana
 7. Kakubha (Arjuna)
 8. Āmra
 9. Kośāmra
10. Corakapatra
(Lākṣāvṛkṣa ?)
11. Jambū
12. Kṣudra Jambū
13. Priyāla
14. Madhuka
(Madhuyaṣṭi)
15. Rohiṇi (?)
16. Vañjula (Jalavetasa)
17. Kadamba
18. Badarī
19. Tindukī
20. Śallakī
21. Rodhra (Lodhra)
22. Sābara Rodhra
23. Bhallātaka
24. Palāśa
25. Nandivṛkṣa
- (25) *Gudūcyādi*
 1. Guḍūci
 2. Nimba
 3. Kustumburu
(Dhānyaka)
 4. Candana
 5. Padmaka
- (26) *Utpalādi*
 1. Utpala
 2. Utpala (Rakta)
 3. Kumuda
 4. Kuvalaya
 5. Saugandhika
 6. Puṇḍarika

7. Madhuka
(Madhuyaṣṭī)

(27) *Mustādi*

1. Mustā
2. Haridrā
3. Dāru Haridrā
4. Haritakī
5. Āmalakī
6. Bibhitaka
7. Kuṣṭha
8. Haimavati
9. Vacā
10. Pāṭhā
11. Kaṭurohiṇī (Kaṭukā)
12. Śārṅgeṣṭhā
13. Ativiṣā
14. Drāviḍī (Sūkṣma elā)
15. Bhallātaka
16. Citraka

(28) *Triphalā*

1. Haritakī
2. Āmalaka
3. Bibhitaka

(29) *Trikāṭu*

1. Pippalī
2. Marica
3. Śrṅgavera (Śuṇṭhī)

(30) *Āmalakyādi*

1. Āmalakī
2. Haritakī

3. Pippalī

4. Citraka

(31) *Trapvādi*

1. Trapu
2. Sisa
3. Tāmra
4. Rajata
5. Kṛṣṇa loha
6. Suvarṇa
7. Lohamala

(32) *Lākṣādi*

1. Lākṣā
2. Ārevata
3. Kuṭaja
4. Aśwamāra (Karavīra)
5. Kaṭphala
6. Haridrā
7. Dāruharidrā
8. Nimba
9. Saptacchada
(Saptaparnā)
10. Mālatī (Jāti)
11. Trāyamāṇā

(33) *Laghu Pañcamūla*

1. Gokṣura
2. Brhatī
3. Kaṇṭakārī
4. Prṣniparṇī
5. Śalaparṇī

(34) *Mahat Pañcamūla*

1. Bilwa
2. Agnimantha

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3. Śyonāka

4. Pātalā

5. Kāśmarya

(35) *Vallī Pañcamūla*

1. Vidārī

2. Sārivā

3. Rajanī (Mañjiṣṭhā)

4. Guḍūci

5. Ajaśrngī (Meṣaśrngī)

(36) *Kaṇṭaka Pañcamūla*

1. Karamarda

2. Gokṣura

3. Saireyaka

4. Śatāvarī

5. Gṛdhranakhī (Himsrā)

(37) *Tṛṇa Pañcamūla*

1. Kuśa

2. Kāśa

3. Nala

4. Darbha

5. Kāṇḍekṣu

Appendix III

*Botanical names¹ of the plants mentioned under Mahakaṣayas
and Gaṇas of Caraka and Suśruta.*

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|---------------|--|
| 1. Agnimantha | Premna latifolia Roxb.
Var. mucronata Clarke. |
| 2. Aguru | Aquilaria agallocha Roxb. |
| 3. Ajagandhā | Gynandropsis gynandra (Linn.)
Briquet. |
| 4. Ajāji | Cuminum cyminum Linn. |
| 5. Ajakarna | Dipterocarpus turbinatus Gaertn. |
| 6. Ajamodā | Trachyspermum roxberghianum (Dc.)
sprague. |
| 7. Alarka | Calotropis gigantea (Linn.) R. Br.
Ex. Ait. |
| 8. Āmalaka | Emblica officinalis Gaertn. |
| 9. Amlavetasa | Garcinia pedunculata Roxb. |
| 10. Āmra | Mangifera indica Linn. |
| 11. Āmrātaka | Spondias pinnata kurz. |
| 12. Añjana | Hardwickia binata Roxb. |
| 13. Apāmārga | Achyranthes aspera Linn. |
| 14. Aparājītā | Clitoria ternatea Linn. |
| 15. Āragwadha | Cassia fistula Linn. |
| 16. Aralu | Ailanthus excelsa Roxb. |
| 17. Ārevata | Rheum emodi Wall. (?) |
| 18. Arimeda | Acacia leucophloea Willd. |

¹ For this, identification of plants made by Prof. Balwant Singh has been followed in general for which the author is grateful to him.

19. Arjaka	<i>Orthosiphon pallidus</i> Royle.
20. Arjuna	<i>Terminalia arjuna</i> W. & A.
21. Arka	<i>Calotropis procera</i> (Ait.) R. Br.
22. Asana	<i>Pterocarpus marsupium</i> Roxb.
23. Aśmantaka	<i>Bauhinia malabarica</i> Roxb.
24. Aśoka	<i>Saraca indica</i> Linn.
25. Aśwagandhā	<i>Withania somnifera</i> Dunal.
26. Aśwakarṇa	<i>Terminalia tomentosa</i> W. & A.
27. Aśwattha	<i>Ficus religiosa</i> Linn.
28. Atibalā	<i>Abutilon indicum</i> (Linn.) Sw.
29. Ativiṣā	<i>Aconitum heterophyllum</i> Wall.
30. Badara	<i>Zizyphus jujuba</i> Lam.
31. Balā	<i>Sida cordifolia</i> Linn.
32. Bhadraudanī (Nāgabalā)	<i>Sida veronicaefolia</i> Lam.
33. Bhāradwājī	<i>Hibiscus cancellatus</i> Roxb.
34. Bhārṅgī	<i>Clerodendrum seratum</i> (Linn.)
35. Bhūmyāmalakī	<i>Phyllanthus urinaria</i> Linn.
36. Bhūrja	<i>Betula utilis</i> D. Don.
37. Bhūtakeśī	<i>Selinium tenuifolium</i> Wall.
38. Bibhītaka	<i>Terminalia belerica</i> Roxb.
39. Bilwa	<i>Aegle marmelos</i> Corr.
40. Bimbī	<i>Coccinia indica</i> W. & A.
41. Br̥haṭī	<i>Solanum indicum</i> Linn.
42. Brāhmī	<i>Bacopa monnieri</i> (Linn.) Pennell.
43. Caṇḍā	<i>Angelica archangelica</i> Linn.
44. Candana	<i>Santalum album</i> Linn.
45. Cavya	<i>Piper chaba</i> Hunter.
46. Chagalāntrī	<i>Argyreia speciosa</i> Sweet.
47. Cirabilwa	<i>Holoptelia integrifolia</i> Planch.
48. Citraka	<i>Plumbago zeylanica</i> Linn.
49. Coca	<i>Cinnamomum cassia</i> Blume.

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| 50. Coraka | <i>Angelica glauca</i> Edgw. |
| 51. Dāḍima | <i>Punica granatum</i> Linn. |
| 52. Danti | <i>Baliospermum montanum</i> Muell-Arg. |
| 53. Darbha | <i>Imperata cylindrica</i> Beauv. |
| 54. Dāru Haridrā | <i>Berberis aristata</i> Dc. |
| 55. Dāsī kuraṇṭaka | <i>Barleria strigosa</i> Linn. |
| 56. Devadāru | <i>Cedrus deodara</i> (Roxb.) Loud. |
| 57. Dhanvayāsa | <i>Fagonia cretica</i> Linn. |
| 58. Dhānyaka | <i>Coriandrum sativum</i> Linn. |
| 59. Dhātakī | <i>Woofordia fruticosa</i> Kurz. |
| 60. Dhava | <i>Anogeissus latifolia</i> Wall. |
| 61. Drākṣā | <i>Vitis vinifera</i> Linn. |
| 62. Dūrvā | <i>Cynodon dactylon</i> (Linn.) Pers. |
| 63. Elavāluka | <i>Prunus carassus</i> Linn. |
| 64. Eraṇḍa | <i>Ricinus communis</i> Linn. |
| 65. Gaja Pippali | <i>Scindapsus officinalis</i> schott. |
| 66. Indravāruṇi | <i>Citrullus colocynthis</i> schrad. |
| 67. Gokṣura | <i>Tribulus terrestris</i> Linn. |
| 68. Gundrā | <i>Typha elephantina</i> Roxb. |
| 69. Gopaghonṭa | <i>Zizyphus xylopyra</i> Willd. |
| 70. Gṛdhranakhī
(Hīmsrā) | <i>Capparis sepiaria</i> Linn. |
| 71. Guggulu | <i>Commiphora mukul</i> (Hook ex
Stocks) Engl. |
| 72. Guḍuci | <i>Tinospora cordifolia</i> (Willd.) Miers. |
| 73. Haimawati | <i>Iris germanica</i> Linn. |
| 74. Hāmsapādi | <i>Adiantum lunulatum</i> Burn. |
| 75. Hareṇuka | <i>Vitex agnus-costus</i> Linn. |
| 76. Haridrā | <i>Curcuma longa</i> Linn. |
| 77. Haritakī | <i>Terminalia chebula</i> Retz. |
| 78. Hīngu | <i>Ferula foetida</i> Regel. |
| 79. Hribēra | <i>Coleus vettiveroides</i> K. C. Jacob. |

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| 80. Ikṣu | <i>Saccharum officinarum</i> Linn. |
| 81. Ikṣuraka | <i>Astercanthus longifolius</i> Nees. |
| 82. Inḡudī | <i>Balanites aegyptiaca</i> (Linn.) Delile. |
| 83. Itkaṭa | <i>Sesbania bispinosa</i> (Jacq.) Faw.
& Rend. |
| 84. Jalavetasa | <i>Salix tetrasperma</i> Roxb. |
| 85. Jambū | <i>Syzygium cumini</i> (Linn.) Skeels. |
| 86. Jātī | <i>Jasminum grandiflorum</i> Linn. |
| 87. Jaṭilā
(Jaṭāmānsī) | <i>Nardostachys jatamansi</i> DC. |
| 88. Jīṅgiṇī | <i>Lanea grandis</i> (Dennst.) Engl. |
| 89. Jīvaka | <i>Microstylis wallichii</i> Lindl. |
| 90. Jivanti | <i>Leptadenia reticulata</i> W. & A. |
| 91. Jyotiṣmatī | <i>Celastrus paniculatus</i> Willd. |
| 92. Kadali | <i>Musa paradisiaca</i> Linn. |
| 93. Kadamba | <i>Anthocephalus cadamba</i> Miq. |
| 94. Kadara (Śweta
khadira) | <i>Acacia suma</i> Buch. Ham. |
| 95. Kākamācī | <i>Solanum nigrum</i> Linn. |
| 96. Kākoli | <i>Roscoea procera</i> Wall. |
| 97. Kālamāla
(Barbarī) | <i>Ocimum basilicum</i> Linn. |
| 98. Kāliyaka | <i>Coscinium fenestratum</i> (Gaertn.)
Coleb. |
| 99. Kamala | <i>Nelumbo nucifera</i> Gaertn. |
| 100. Kampillaka | <i>Mallotus philippinensis</i> Muell-Arg. |
| 101. Kāṇḍīra | <i>Ranunculus sceleratus</i> Linn. |
| 102. Kaṇṭakārī | <i>Solanum xanthocarpum</i> Schrad. &
Wendl. |
| 103. Kaṇṭaki
(Vikankata) | <i>Flacourtia indica</i> Merr. |
| 104. Kapikacchu | <i>Mucuna pruriens</i> DC. |

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| 105. Kapīṭana | <i>Thespasia populnea</i> Soland. ex
Correa. |
| 106. Karamarda | <i>Carissa carandas</i> Linn. |
| 107. Karañja | <i>Pongamia pinnata</i> (Linn.) Merr. |
| 108. Kāravellaka | <i>Momordica charantia</i> Linn. |
| 109. Karavīra | <i>Nerium indicum</i> Mill |
| 110. Karbudāra | <i>Bauhinia Variegata</i> Linn. |
| 111. Karkataśṛṅgī | <i>Pistacia integerrima</i> Stew. ex
Brandis. |
| 112. Kāśa | <i>Saccharum spontaneum</i> Linn. |
| 113. Kāsamarda | <i>Cassia occidentalis</i> Linn. |
| 114. Kāśmarya | <i>Gmelina arborea</i> Linn. |
| 115. Kataka | <i>Strychnos potatorum</i> Linn. f. |
| 116. Kaṭphala | <i>Myrica nagi</i> Thunb. |
| 117. Kattṛṇa | <i>Cymbopogon citratus</i> (Dc.) |
| 118. Kaṭukā | <i>Picrorhiza kurroa</i> Royle. ex Benth. |
| 119. Kebuka | <i>Costus speciosus</i> (Koem.) Sm. |
| 120. Khadira | <i>Acacia catechu</i> Willd. |
| 121. Kharjūra | <i>Phoenix sylvestris</i> Roxb. |
| 122. Kirātatikta | <i>Swertia chirata</i> Buch. Ham. |
| 123. Kośāmra | <i>Schleichera oleosa</i> (Lour.) Merr. |
| 124. Kovidāra | <i>Bauhinia purpurea</i> Linn. |
| 125. Kramuka (Pūga) | <i>Areca catechu</i> Linn. |
| 126. Kṛṣṇa sārīvā | <i>Cryptolepis buchanani</i> Roem. &
Schult. |
| 127. Kṣavaka | <i>Centipeda minima</i> (Linn.) A. Br. et.
Aschers. |
| 128. Kṣīra kākoli | <i>Roscoeia</i> Sp. |
| 129. Kṣīriṇī | <i>mimusops hexandra</i> Roxb. |
| 130. Kṣudra Jambū | <i>Eugenia heyneana</i> Wall. |
| 131. Kulattha | <i>Dolichos biflorus</i> Linn. |
| 132. Kumbhika | <i>Carreya arborea</i> Roxb. |

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133. Kuraṇṭaka *Barleria prionitis* Linn.
 134. Kuraṇṭikā *Celosia argentea* Linn.
 (Śitivārikā)
 135. Kuśa *Desmostachya bipinnata* Stapf.
 136. Kuṣṭha *Saussurea lappa* C. B. Clarke.
 137. Kuṭaja *Holarrhena antidysenterica* Wall.
 138. Kuvala *Garcinia cowa* Roxb.
 139. Lajjālu *mimosa pudica* Linn.
 140. Lakuca *Artocarpus lakoocha* Roxb.
 141. Lāṅgali *Gloriosa superba* Linn.
 142. Lodhra *Symplocos racemosa* Roxb.
 143. Mācikā 1. *Tamarix gallica* Linn.
 2. *T. aphylla* Karst.
 144. Madanaphala *Randia dumetorum* Lam.
 145. Madhuka *Glycyrrhiza glabra* Linn.
 146. Madhūka *Madhuca indica* J. F. Gmel.
 147. Madhu Śigru *Moringa concanensis* Nimmo.
 148. Mahāmedā *Polygonatum* Sp.
 149. Mahānimba *Melia azederach* Linn.
 150. Mahāśyāmā *Ipomoea petaloidea* Chois.
 (Vṛddhadāru)
 151. Mañjiṣṭhā *Rubia cordifolia* Linn.
 152. Marica *Piper nigrum* Linn.
 153. Māṣa *Phaseolus mungo* Linn.
 154. Māsaparnī *Teramnus labialis* Spreng.
 155. Mātuluṅgī *Citrus medica* Linn.
 156. Medā *Polygonatum verticillatum* All.
 157. Meṣāśṛṅgī *Gymnema sylvestre* R. Br.
 158. Moraṭa *Maerua arenaria* Hook. f. & Th.
 159. Mudgaparnī *Phaseolus trilobus* Ait.
 160. Muṇḍī *Sphaeranthus indicus* Linn.
 161. Mūrvā *Marsdenia tenacissima* W. & A.

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| 162. Mūṣākarnī | <i>Ipomoea reniformis</i> Chois. |
| 163. Muṣkaka | <i>Schrebera swietenoides</i> Roxb. |
| 164. Mustā | <i>Cyperus rotundus</i> Linn. |
| 165. Nāgādanti | <i>Croton oblongifolius</i> Roxb. |
| 166. Nāgakeśara | <i>Mesua ferrea</i> Linn. |
| 167. Nala | <i>Phragmites maxima</i> Blatter and MC.
Cann. |
| 168. Nandivṛkṣa | <i>Ficus retusa</i> Linn. |
| 169. Nimba | <i>Azadirachta indica</i> A. Juss. |
| 170. Nīpa | <i>Adina cordifolia</i> Benth. and Hook. f. |
| 171. Nirguṇḍi | <i>Vitex negundo</i> Linn. |
| 172. Padmaka | <i>Prunus cerasoides</i> D. Don. |
| 173. Palāśa | <i>Butea monosperma</i> (Linn.) |
| 174. Parpaṭa | <i>Fumaria officinalis</i> Linn. |
| 175. Paruṣaka | <i>Grewia asiatica</i> Linn. |
| 176. Pāṣāṇabheda | <i>Bergenia ligulata</i> (Wall.) Engl. |
| 177. Pāṭalā | <i>Streospermum suaveolens</i> Dc. |
| 178. Pāṭhā | <i>Cissampelos pariera</i> Linn. |
| 179. Paṭola | <i>Trichosanthes dioica</i> Roxb. |
| 180. Patra | <i>Cinnamomum tamala</i> Nees. and
Eberm. |
| 181. Payasyā
(Kṣīravidārī) | <i>Ipomoea paniculata</i> R. Br. |
| 182. Phalgu | <i>Ficus carica</i> Linn. |
| 183. Phaṇijjhaka | <i>Origanum majorana</i> Linn. |
| 184. Phaṇji | <i>Rivea ornata</i> Chois. |
| 185. Pīlu | <i>Salvadora persica</i> Linn. |
| 186. Pippali | <i>Piper longum</i> Linn. |
| 187. Plakṣa | <i>Ficus lacor</i> Buch. Ham. |
| 188. Prācībala
(Kākajānghā) | <i>Vitex peduncularis</i> Wall. |
| 189. Priyāla | <i>Buchanania lanzan</i> Spreng. |

190. Priyaṅgu *Callicarpa macrophylla* Vahl.
 191. Pṛṣniparnī *Uraria picta* Desv.
 192. Punarnavā i) *Boerhaavia diffusa* Linn.
 ii) *B. repens* Linn.
 193. Punnāga *Calophyllum inophyllum* Linn.
 194. Puṣkaramūla *Inula racemosa* Hook. f.
 195. Putraśreṇi *Croton tiglium* Linn.
 (Dravanti)
 196. Rājakṣavaka 1. *Euphorbia thymifolia* Linn.
 (Dugdhikā) 2. *E. Prostrata* W. Ait.
 197. Rakta candana *Pterocarpus santalinus* Linn. f.
 198. Rāsnā *Pluchea lanceolata* Oliver and Hiern.
 199. Rṣabhaka *Microstylis* Sp.
 200. Rohiṣa *Cymbopogon martinii* (Roxb.) Wats.
 201. Śāka *Tectona grandis* Linn. f.
 202. Śāla *Shorea robusta* Gaertn.
 203. Śālaparnī *Desmodium gangeticum* Dc.
 204. Śālī *Oryza sativa* Linn.
 205. Śatī *Hedychium spicatum* Ham. ex Smith.
 206. Śāllakī *Boswellia serrata* Roxb.
 207. Śālmālī *Śālmalia malabarica* Schott.
 208. Śaṇapuṣpī *Crotalaria verrucosa* Linn.
 209. Saptalā *Euphorbia dracunculoides* Lam.
 210. Saptaparna *Alstonia scholaris* R. Br.
 211. Saralā *Pinus roxburghii* Sargent
 212. Sārivā *Hemidesmus indicus* R. Br.
 213. Sārṅgeṣṭā *Cardiospermum halicacabum* Linn.
 214. Sarṣapa *Brassica campestris* Var. Sarson Prain.
 215. Śatapušpā 1. *Peucedanum graveolens* Linn.
 2. *Foeniculum vulgare* Mill.
 216. Śatāvarī *Asparagus racemosus* Willd.
 217. Śigru *Moringa pterygosperma* Gaertn.

218. Śimśapā	<i>Delbergia sisso</i> Roxb.
219. Sindhuvāra	<i>Vitex trifolia</i> Linn. f.
220. Śirīṣa	<i>Albizzia lebbek</i> Benth.
221. Śleṣmātaka	<i>Cordia myxa</i> Roxb.
222. Snuhī	<i>Euphorbia neriifolia</i> Linn.
223. Sprṅkā	<i>Delphinium zalil</i> Aitch. and Hemsl.
224. Sthaṇḍeyaka	<i>Taxus baccata</i> Linn.
225. Sūkṣma Elā	<i>Elettaria cordamom</i> Maton.
226. Sumukha (Rājikā)	<i>Brassica juncea</i> (Linn.) Czern and Coss.
227. Śuṇṭhī	<i>Zinziber officinale</i> Roscoe.
228. Surasa (Tulasī)	<i>Ocimum sanctum</i> Linn.
229. Surasī	<i>Limonia crenulata</i> Roxb.
230. Swarnaṅṣirī	<i>Euphorbia thomsoniana</i> Boiss.
231. Śweta śirīṣa	<i>Albizzia procera</i> (Roxb.) Benth.
232. Śweta śursa	<i>Ocimum canum</i> Sims.
233. Śyonāka	<i>Oroxylum indicum</i> Vent.
234. Tagara	<i>Valeriana wallichii</i> DC.
235. Tāla	<i>Borassus flabellifer</i> Linn.
236. Tarkārī	<i>Clerodendrum phlomidis</i> Linn. f.
237. Tinḍuka	<i>Diospyros tomentosa</i> Roxb.
238. Tila	<i>Sesamum indicum</i> Linn.
239. Tilwaka	<i>Viburnum nervosum</i> D. Don.
240. Tinīśa	<i>Ougeinia dalbergioides</i> Benth.
241. Trivṛt	<i>Ipomoea turpethum</i> R. Br.
242. Trāyamāṇā	<i>Gentiana kurroo</i> Royle.
243. Twak	<i>Cinnamomum zeylanicum</i> Blume.
244. Tumbā (Alābu)	<i>Lagenaria siceraria</i> Standl.
245. Turuṣka	i. <i>Liquidamber orientalis</i> Miller. ii. <i>Altingia excelsa</i> Noronha.
246. Udumbara	<i>Ficus racemosa</i> Linn.
247. Utpala	<i>Nymphoea stellata</i> Willd.

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248. Uśīra	Vetiveria zizanioides (Linn.) Nash.
249. Vacā	Acorus calamus Linn.
250. Vandāka	Loranthus longiflorus Desv.
251. Varṣābhū	Trianthema portulacastrum Linn.
252. Varuṇa	Crataeva nurvala Buch. Ham.
253. Vāsuka	Osmanthus fragrans Lour.
254. Vaṭa	Ficus bengalensis Linn.
255. Viḍaṅg	Embelia ribes Burm. f.
256. Vidārī	Pueraria tuberosa DC.
257. Vidula	Barringtonia acutangula (Linn.) Gaertn.
258. Virataru	Dichrostachys cineria W. & A.
259. Vṛkṣāmla	Garcinia indica Choisy.
260. Vṛścikālī	Pergularia extensa N. E. Br.
261. Yava	Hordeum vulgare Linn.

Appendix IV

Glossary of Botanical and Sanskrit names of Vegetable drugs mentioned under Mahākaṣāyas and Gaṇas of Caraka and Śuśruta.

1. Abutilon indicum (Linn.) Sw.	Atibalā
2. Acacia catechu Willd.	Khadira
3. Acacia leucophloea Willd.	Arimeda
4. Acacia suma Buch-Ham.	Kadara (Śweta khadira)
5. Achyranthes aspera Linn.	Apāmārga
6. Aconitum heterophyllum Wall.	Ativiṣā
7. Acorus calamus Linn.	Vacā
8. Adiantum lunulatum Burn.	Hamsapadi
9. Adina cordifolia Benth and Hook. f.	Nīpa
10. Aegle marmelos Corr.	Bilwa
11. Ailanthus excelsa Roxb.	Aralu
12. Albizzia lebeck Benth.	Śirīṣa
13. Albizzia procera (Roxb.) Benth.	Śweta śirīṣa
14. Alstonia scholaris R. Br.	Saptaparnā
15. Altingia excelsa Noronha.	Turuṣka
16. Angelica archangelica Linn.	Caṇḍā
17. Angelica glauca Edgw.	Coraka
18. Anogeissus latifolia Wall.	Dhava
19. Anthocephalus cadamba Miq.	Kadamba
20. Aquilaria agallocha Roxb.	Aguru
21. Areca catechu Linn.	Kramuka (Pūga)
22. Argyreia speciosa Smet.	Chagalāntri
23. Artocarpus lakoocha Roxb.	Lakuca
24. Asparagus racemosus Willd.	Śatāvri

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25. <i>Astercantha longifolia</i> Nees.	Ikṣuraka
26. <i>Azadiracta India</i> A. Juss.	Nimba
27. <i>Bacopa monnieri</i> (Linn.) Pennel.	Brāhmī
28. <i>Balanites aegyptiaca</i> (Linn.) Delile.	Ingurī
29. <i>Baliospermum montanum</i> Muell-Arg.	Dantī
30. <i>Barleria prionitis</i> Linn.	Kuraṇṭaka
31. <i>Barleria strigosa</i> Linn.	Dāsī-Kura- ṇṭaka
32. <i>Barringtonia acutangula</i> (Linn.) Gaertn.	Vidula
33. <i>Bauhinia malabarica</i> Roxb.	Aśmantaka
34. <i>Bauhinia purpurea</i> Linn.	Kovidāra
35. <i>Bauhinia variegata</i> Linn.	Karbudāra
36. <i>Berberis aristata</i> DC.	Dāruharidrā
37. <i>Bergenia ligulata</i> (Wall.) Engl.	Pāṣāṇabheda
38. <i>Betula utilis</i> D. Don.	Bhūrja
39. <i>Boerhaavia diffusa</i> Linn.	Punarnavā
40. <i>Borassus flabellifer</i> Linn.	Tāla
41. <i>Boswellia serrata</i> Roxb.	Śallakī
42. <i>Brassica campestris</i> Var. Sarson Prain.	Sarṣapa
43. <i>Brassica juncea</i> (Linn.) Czern. and Coss.	Sumukha (Rājikā)
44. <i>Buchanania lanzan</i> Spreng.	Priyāla
45. <i>Butea monosperma</i> (Linn.) Kuntze.	Palāśa
46. <i>Callicarpa macrophylla</i> Vahl.	Priyaṅgu
47. <i>Calophyllum inophyllum</i> Linn.	Punnāga
48. <i>Calotropis gigantea</i> (Linn.) R.Br. ex. Ait.	Alarka
49. <i>Calotropis procera</i> (Ait.) R. Br.	Arka
50. <i>Capparis sepiaria</i> Linn.	Gṛdhranakhī (Himsrā)
51. <i>Careya arborea</i> Roxb.	Kumbhika
52. <i>Carissa carandus</i> Linn.	Karamarda
53. <i>Cassia fistula</i> Linn.	Āragwadha

54. <i>Cassia occidentalis</i> Linn.	Kāsamarda
55. <i>Cedrus deodara</i> (Roxb.) Loud.	Devadāru
56. <i>Celastrus paniculatus</i> Willd.	Jyotiṣmatī
57. <i>Celosia argentea</i> Linn.	Kuraṇṭikā (Śitivārikā)
58. <i>Centipeda minima</i> (Linn.) A. Br. et Aschers.	Kṣavaka
59. <i>Cinnamomum cassia</i> Blume	Coca
60. <i>Cinnamomum tamala</i> Nees. and Eberm.	Patra
61. <i>Cinnamomum zeylanicum</i> Blume.	Twak
62. <i>Cissampelos pariera</i> Linn.	Pāṭhā
63. <i>Citrullus colocynthis</i> Schrad.	Indravāruṇī
64. <i>Citrus medica</i> Linn.	Mātuluṅga
65. <i>Clerodendrum phlomidis</i> Linn. f.	Tarkāri
66. <i>Clerodendrum serratum</i> (Linn.) Moon.	Bhārṅgī
67. <i>Clitoria ternatea</i> Linn.	Śaṁkhinī (Aparājītā)
68. <i>Cocconia india</i> W. & A.	Bimbī
69. <i>Coleus vettiveroides</i> K. C. Jacob.	Hribera
70. <i>Commiphora mukul</i> (Hook. ex Stocks.) Engl.	Guggulu
71. <i>Cordiospermum halicacabum</i> Linn.	Śārṅgeṣṭā
72. <i>Coriandrum sativum</i> Linn.	Dhānyaka
73. <i>Cordia myxa</i> Roxb.	Śleṣmātaka.
74. <i>Coscinium fenestratum</i> (Gaertn.) Colebr.	Kāliyaka
75. <i>Costus speciosus</i> (Koen.) Sm.	Kebuka
76. <i>Crataeva nurvala</i> Buch. Ham.	Varuṇa
77. <i>Crocus sativus</i> Linn.	Kuṅkuma
78. <i>Crotalaria verrucosa</i> Linn.	Śaṇapuşpi
79. <i>Croton oblongifolius</i> Roxb.	Nāgadanti
80. <i>Croton tiglium</i> Linn.	Putraśreṇi
81. <i>Cryptolepis buchanani</i> Roem. and Schult.	Kṛṣṇa sārīvā.
82. <i>Cuminum cyminum</i> Linn.	Ajājī (Jiraka)

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83. <i>Curcuma longa</i> Linn.	Haridrā
84. <i>Cymbopogon citratus</i> (Dc.) Stapf.	Kattrṇā
85. <i>Cynodon dactylon</i> (Linn.) Pers.	Dūrvā
86. <i>Cymbopogon martini</i> (Roxb.) Wats.	Bhūstrṇa
	(Rohiṣa)
87. <i>Cyperus rotundus</i> Linn.	Musta
88. <i>Dalbergia sissoo</i> Roxb.	Śimśapā
89. <i>Delphinium zalil</i> Aitch. and Hemsl.	Sprkkā
90. <i>Desmodium gangeticum</i> Dc.	Śālaparnī
91. <i>Desmostachya bipinnata</i> Stapf.	Kuśa
92. <i>Dichrostachys cinerea</i> W. & A.	Virataru
93. <i>Diospyros tomentosa</i> Roxb.	Tinduka
94. <i>Dipterocarpus turbinatus</i> Gaertn.	Ajakarṇa
95. <i>Dolichos biflorus</i> Linn.	Kulattha
96. <i>Elettaria cardamomum</i> Maton.	Sūkṣma elā
97. <i>Emblia officinalis</i> Gaertn.	Āmalaka
98. <i>Embelia ribes</i> Burm. f.	Viḍaṅga
99. <i>Eugenia heyneana</i> Wall.	Kṣudra
	Jambū
100. <i>Euphorbia dracunculoides</i> Lam.	Saptalā
101. <i>Euphorbia neriifolia</i> Linn.	Snuhi
102. <i>Euphorbia thomsoniana</i> Boiss.	Swarnakṣīrī
103. <i>Euphorbia thymifolia</i> Linn.	Rājākṣavaka
	(Dugdhikā)
104. <i>Fagonia cretica</i> Linn.	Dhanvayāsa
105. <i>Ferula foetida</i> Regel.	Hiṅgu
106. <i>Ficus bengalensis</i> Linn.	Vaṭa
	(Nyagrodha)
107. <i>Ficus carica</i> Linn.	Phalgu
108. <i>Ficus lacor</i> Buch. Ham.	Plakṣa
109. <i>Ficus racemosa</i> Linn.	Udumbara
110. <i>Ficus religiosa</i> Linn.	Aśwattha

111. <i>Ficus retusa</i> Linn.	Nandivṛkṣa
112. <i>Flacourtia indica</i> Merr.	Kaṇṭaki (Vikankata)
113. <i>Foeniculum vulgare</i> Mill.	Śatapuspā
114. <i>Fumaria officinalis</i> Linn.	Parpaṭa
115. <i>Garcinia cowa</i> Roxb.	Kuvala
116. <i>Garcinia indica</i> Chois.	Vṛkṣāmla
117. <i>Garcinia pedunculata</i> Roxb.	Amlavetasa
118. <i>Gentiana kurroo</i> Royle.	Trāyamāṇā
119. <i>Gloriosa superba</i> Linn.	Lāṅgali
120. <i>Glycyrrhiza glabra</i> Linn.	Madhuka (Madhuyaṣṭi)
121. <i>Gmelina arborea</i> Linn.	Kāśmarya
122. <i>Grewia asiatica</i> Linn.	Parūṣaka
123. <i>Gymnema sylvestre</i> R. Br.	Meṣaśṛṅgi
124. <i>Hardwickia binata</i> Roxb.	Añjana
125. <i>Hedychium spicatum</i> Ham. ex Smith	Śaṭi
126. <i>Hemidesmus indicus</i> R. Br.	Sārivā
127. <i>Hibiscus cancellatus</i> Roxb.	Bhāradwāji
128. <i>Holarrhena antidysentrica</i> Wall.	Kuṭaja
129. <i>Holoptelia integrifolia</i> Planch.	Cirabilva
130. <i>Hordeum vulgare</i> Linn.	Yava
131. <i>Imperata cylindrica</i> Beauv.	Darbha
132. <i>Ipomoea paniculata</i> R. Br.	Payasyā (Kṣira vidārī)
133. <i>Ipomoea pataloidea</i> Chois.	Vṛddhadāru
134. <i>Ipomoea reniformis</i> Chois.	Mūṣākarṇī
135. <i>Ipomoea turpethum</i> R. Br.	Trivṛt
136. <i>Inula racemosa</i> Hook. f.	Puṣkaramūla
137. <i>Iris germanica</i> Linn.	Haimavatī
138. <i>Jasminum grandiflorum</i> Linn.	Jāti
139. <i>Lagenaria siceraria</i> Standl.	Tumba (Alābu)

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141. <i>Lannea grandis</i> (Dennst.) Engl.	Jiṅginī
142. <i>Leptadenia reticulata</i> W. & A.	Jīvanti
143. <i>Limonia crenulata</i> Roxb.	Surasī
144. <i>Liquidamber orientalis</i> Miller.	Turuṣka
145. <i>Loranthus longiflorus</i> Desv.	Vandāka
146. <i>Maduca indica</i> J. F. Gmel.	Mdhūka
147. <i>Maerua arenaria</i> Hook f. and Th.	Moraṭa
148. <i>Mallotus philippinensis</i> Muell-Arg	Kampillaka
149. <i>Mangifera indica</i> Linn.	Āmra
150. <i>Marsdenia tenacissima</i> W. & A.	Mūrvā
151. <i>Melia azedarach</i> Linn.	Mahānimba
152. <i>Mesua ferrea</i> Linn.	Nāgakeśara
153. <i>Microstylis</i> sp.	Rṣabhaka
154. <i>Microstylis Wallichii</i> Lindl.	Jīvaka
155. <i>Mimosa pudica</i> Linn.	Lajjālu
156. <i>Mimusops hexandra</i> Roxb.	Kṣīriṇī
157. <i>Momordica charantia</i> Linn.	Kāravellaka
158. <i>Moringa concanensis</i> Nimbo.	Madhuśigru
159. <i>Moringa ptrygosperma</i> Gaertn.	Śigru
160. <i>Mucuna pruriens</i> DC.	Kapikacchū
161. <i>Musa paradisiaca</i> Linn.	Kadalī
162. <i>Myrica nagi</i> Thunb.	Kaṭphala
163. <i>Nardostachys jatamansi</i> DC.	Jaṭilā (Jaṭāmāṁsī)
164. <i>Nelumbo mucifera</i> Gaertn.	Kamala
165. <i>Nerium indicum</i> Mill.	Karavīra
166. <i>Nymphaea stillata</i> Willd.	Utpala
167. <i>Ocimum basilicum</i> Linn.	Kālamāla (Barbarī)
168. <i>Ocimum canum</i> Sims.	Śweta surasā
169. <i>Ocimum sanctum</i> Linn.	Surasā (Tulasī)

170. <i>Origanum majorana</i> Linn.	Phañijjhaka
171. <i>Oroxylum indicum</i> Vent.	Śyonāka
172. <i>Orthosiphon pallidus</i> Royle.	Arjaka
173. <i>Oryza sativa</i> Linn.	Śāli
174. <i>Osmanthus fragrans</i> Lour.	Vasuka
175. <i>Ougeinia dalbergioides</i> Benth.	Tiniśa
176. <i>Pergularia extensa</i> N. E. Br.	Vṛṣcikālī
177. <i>Peucedanum graveolens</i> Linn.	Śatapuspā
178. <i>Phaseolus mungo</i> Linn.	Māṣa
179. <i>Phaseolus trilobus</i> Ait.	Mudgaparṇī
180. <i>Phoenix sylvestre</i> Roxb.	Kharjūra
181. <i>Phragmites maxima</i> Blatter & Mc Cann	Nala
182. <i>Phyllanthus urinaria</i> Linn.	Bhūmyā- malakī
183. <i>Picrorhiza kurroa</i> Royle ex Benth.	Kaṭukā
184. <i>Pinus roxburghii</i> Sargent	Sarala
185. <i>Piper chaba</i> Hunter.	Cavya
186. <i>Piper longum</i> Linn.	Pippalī
187. <i>Piper nigrum</i> Linn.	Marica
188. <i>Pistacia integerrima</i> Stew ex Brandis	Karkaṭaśṛṅgi
189. <i>Pluchea lanceolata</i> Oliver & Hiern	Rāsnā
190. <i>Plumbago zeylanica</i> Linn.	Citraka
191. <i>Polygonatum</i> sp.	Mahāmedā
192. <i>Polygonatum verticillatum</i> All.	Medā
193. <i>Pongamia pinnata</i> (Linn.) Merr.	Karañja
194. <i>Premna latifolia</i> Roxb. Var. <i>mucronata</i> Clarke.	Agnimantha
195. <i>Prunus cerasoides</i> D. Don.	Padmaka
196. <i>Prunus cerasus</i> Linn.	Elavāluka
197. <i>Pterocarpus marsupium</i> Roxb.	Asana (Bijaka)
198. <i>Pterocarpus santalinus</i> Linn. f.	Rakta candana

199. <i>Pueraria tuberosa</i> DC.	Vidārī
200. <i>Punica granatum</i> Linn.	Dāḍima
201. <i>Randia dumetorum</i> Lam.	Madanaphala
202. <i>Ranunculus sceleratus</i> Linn.	Kāṇḍira
203. <i>Rheum emodi</i> wall.	Ārevata
204. <i>Ricinus communis</i> Linn.	Eraṇḍa
205. <i>Rivea ornata</i> Chois	Phañjī
206. <i>Roscoeia</i> sp.	Kṣīrakākolī
207. <i>Roscoeia procera</i> Wall.	Kākolī
208. <i>Rubia cordifolia</i> Linn.	Mañjiṣṭhā
209. <i>Saccharum officinarum</i> Linn.	Ikṣu
210. <i>Saccharum spontaneum</i> Linn.	Kāśa
211. <i>Salix tetrasperma</i> Roxb.	Jalavetasa
212. <i>Salmalia malabarica</i> Schott & Endl.	Śālmali
213. <i>Salvadora persica</i> Linn.	Pīlu
214. <i>Santalum album</i> Linn.	Candana
215. <i>Saraca indica</i> Linn.	Aśoka
216. <i>Saussurea lappa</i> C. B. Clarke	Kuṣṭha
217. <i>Schleichera oleosa</i> (Lour.) Merr.	Kośāmra
218. <i>Schreberia swietenoides</i> Roxb.	Muṣkaka
219. <i>Scindapsus officinalis</i> Schott.	Gaja pippalī
220. <i>Selinium tenuifolium</i> Wall.	Bhūtakeśī
221. <i>Semecarpus anacardium</i> Linn. f.	Bhallātaka
222. <i>Sesamum indicum</i> Linn.	Tila
223. <i>Sesbania bispinosa</i> (Jacq.) Fawcett and Rendle.	Itkaṭa
224. <i>Shorea robusta</i> Gaertn.	Śāla
225. <i>Sida cordifolia</i> Linn.	Balā
226. <i>Sida Veronicaefolia</i> Lam.	Nāgabalā
227. <i>Solanum indicum</i> Linn.	Bṛhati
228. <i>Solanum nigrum</i> Linn.	Kākamācī

229. <i>Solanum xanthocarpum</i> Schrad. & Wendle	Kaṇṭakāri
230. <i>Sphaeranthus indicus</i> Linn.	Muṇḍi
231. <i>Spondias pinnata</i> Kurz.	Āmrātaka
232. <i>Stereospermum suaveolens</i> DC.	Pāṭalā
233. <i>Strychnos potatorum</i> Linn. f.	Kataka
234. <i>Swertia chirata</i> Buch. Ham.	Kirātatikta
235. <i>Symplocos racemosa</i> Roxb.	Lodhra
236. <i>Syzygium cumini</i> (Linn) skeels	Jambū
237. 1. <i>Tamarix gallica</i> Linn.	Mācikā
2. <i>T. aphylla</i> Karst.	
238. <i>Taxus baccata</i> Linn.	Sthaṇḍeyaka.
239. <i>Tectona grandis</i> Linn. f.	Śāka
240. <i>Teramnus labialis</i> Spreng.	Māṣaparni
241. <i>Terminalia arjuna</i> W. A.	Arjuna
242. <i>Terminalia belerica</i> Roxb.	Bibhītaka
243. <i>Terminalia chebula</i> Retz.	Haritakī
244. <i>Terminalia tomentosa</i> W. A.	Aśwakarna
245. <i>Thespesia populnea</i> Soland ex Correa	Kapīṭana
236. <i>Tinospora cordifolia</i> (Willd.) Miers	Gudūci
247. <i>Trachyspermum ammi</i> (Linn.) Sprague	Bhūtika (yavāni)
248. <i>Trachyspermum roxburghianum</i> (DC.) Sprague	Ajamodā
249. <i>Tribulus terrestris</i> Linn.	Gokṣura
250. <i>Trianthema portulacastrum</i> Linn.	Varṣābhū
251. <i>Trichosanthes dioica</i> Roxb.	Paṭola
252. <i>Typha elephantina</i> Roxb.	Gundra
253. <i>Uraria picta</i> Desv.	Prśniparni
254. <i>Valeriana wallichii</i> DC.	Tagara

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255. <i>Vetiveria zizanioides</i> (Linn.) Nash.	Uśira
256. <i>Viburnum nervosum</i> D. Don.	Tilwaka
257. <i>Vitex agnus-costus</i> Linn.	Hareṇuka
258. <i>Vitex negundo</i> Linn.	Nirguṇḍī
259. <i>Vitex peduncularis</i> Wall.	Prācibala (Kākjaṅghā)
260. <i>Vitex trifolia</i> Linn. f.	Sindhuvāra
261. <i>Vitex vinifera</i> Linn.	Drākṣā
262. <i>Withania somnifera</i> Dunal.	Aśwagandhā
293. <i>Woodfordia fruticosa</i> Kurz.	Dhātakī
264. <i>Zinziber officinale</i> Roscoe	Śuṇṭhī
265. <i>Zizyphus xylopyra</i> Willd.	Gopaghonṭā
266. <i>Zizyphus jujuba</i> Lam.	Badara.

Appendix V

A list of Nighaṇṭus and texts of Dravyaṅga in Sanskrit.

S.No	Title	Author	Location. of Ms.	Published editions
1	2	3	4	5
1	Abhidhāna Candrikā	Bhīmasena	ACC	—
2	Abhidhāna Cintāmaṇi	Cakrapāṇidāsa	GOM (Saka 1721)	—
3	Abhidhāna Ratnamālā (Śṛḍṛasanighaṇṭu)	—	SAO, ARM, GOM, TML, ALM, OLM, SBB, IOL, NLP— Quoted by Malli- nath on Sisupāl- vādhā I-12, XVII-18, See NCC	1. Madras, 1881, (Telugu Script) 2. Madras, 1939, Reprint of 1928 ed. (Telugu Script)
4	Abhidhāna Cūdāmaṇi (See Rājānighaṇṭu)	Narahari	GOM, OLM, BOR, OIB, IHM, GMP. MLA, TML, OLU, IOL.	1. Anandasrama, Poona 1925 (with Dhanwan- tari Nighaṇṭu) 2. Jivananded., Calcutta

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5	Abhidhāna Mañjarī	Bhīṣagācārya	—	—	—
6	Abhinava Nighaṇṭu	Dattaram Chaube	—	—	Nirṇaya Sāgar Press, Bombay, 1793 (with Hindu Com.) Bombay, 1900
7	Abhinava Nighaṇṭu	—	NCC	NCC	—
8	Agastya Nighaṇṭu	Agastya	NCC	NCC	—
9	Aindra Nighaṇṭu	Vararuci	TKS	TKS	—
10	Akārādi Nighaṇṭu or Dhanwantari Nighaṇṭu	Amṛtanandin	NCC	NCC	—
11	Akārādi Nighaṇṭu	—	Evidently the Vaidya- anighaṇṭu See NCC.	—	—
12	Akārādi Vaidya nighaṇṭu	—	NCC	NCC	—
13	Anupānavidhi	Suśeṇadeva	ROR	ROR	—
14	Aṣṭāṅga Nighaṇṭu or Aṣṭā- ṅghrdaya Nighaṇṭu	Vāhaṭa	GOM. TML, ASC, NLP, See NCC.	GOM. TML, ASC, NLP, See NCC.	Kuppuswami S. stri Research Institute Madras, 1973, Ed. P. V. Sharma
15	Aṣṭāṅgalhrdaya Dravya- vijñāna.	—	NCC.	NCC.	—
16	Attharva Nighaṇṭu	—	NCC	NCC	—
17	Audbhidadravaya-Nāma- guṇa-vimārśa	—	GOM; See NCC.	GOM; See NCC.	—
18	Auśadha Grāhaṇa Prākavidhi	—	NCC.	NCC.	—
19	Auśadha Guṇapāṭha	—	NCC	NCC	—

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1	2	3	4	5
20	Auṣadha Nāmāvali	Govardhana	ABS, ASC (Author-Govardhana Nath Mishra) HAM	Benares (ASC. MS.)
21	Auṣadhanāmāvali	Vaidya Vijaya Śaṅkara		
22	Auṣadha Nighaṇṭu	—	MJK	
23	Auṣadha Prakaraṇa (of Hamekhala Tantra)	—	PGI (S. 1926)	
24	Auṣadha-Pratinidhi-Kalpanā	—	SBB	
25	Auṣadhi Koṣa	—	BOR	
26	Auṣadhi Nāma Māla (Laghu Nighaṇṭu)	Vyāsakeśava Rāma	BOR, ASB.	Indian Drug Research Association, Poona 1962.
27	Auṣadhi Koṣa (with Sans. & Kannada)	—	NCC.	
28	Auṣadhikoṣa (with Marathi equivalents)	—	NCC.	
29	Auṣadhi Koṣa (equivalents in Marathi & Gujarati)	—	NCC	Ahmedabad, 1899.
30	Auṣadhi Nāmāvali	—	BOR (Same as Vaidya Nāmamālā) —	—
31	Ayurveda Cintāmaṇi	Baladeva Prasad Mishra		Lakṣmī Venkateśwara Press, 1937 (with author's Hindi Com.)

32	Ayurveda-Dravyaguṇa	—	NCC	—
33	Ayurvedokta Dravyaguṇā- bhidhānam	Bholanath Mukho- padhyaya	—	Calcutta.
34	Ayurvediya Dravyā- bhidhāna	K. B. Lal Sengupta	—	Calcutta, 1875
35	Bhaiṣajya Guṇārṇava	Pūjyapāda	IOL	—
36	Bhaiṣajya-Vijñānam	Ishana chandra Visharada	—	Calcutta.
37	Bhāva Prakāśa Kośa	—		C. K. Sen, Calcutta.
38	Bhāvaswabhāva (Vāda)	Mādhava	ASB, OIB, BHU, SBB, NLP	Chowkhamba Vidya Bhavan, Vnsi, 1973. Ed. P. V. Sharma.
39	Bheṣaja Nāma Mālā (Dravyanirṇaya Nighaṇṭu)	—	GLN	
40	Bhogyadravyaguṇaviśayaḥ	—	GOM	
41	Bhojarāja Nighaṇṭu	—	KBC	
42	Bṛhannighaṇṭu Ratnākara	—	ARM	
43	Bṛhan Nighaṇṭu Ratnākara	Śāligrāma Vaiśya	KBC	See Śāligrāma Nighaṇṭu bhūṣaṇa.
44	Dakṣiṇāmūrti Nighaṇṭu	—	GOM, NLP, ADV, (Author-Veṅka- teśwara)	
45	Dhanañjaya Kośa (Nighaṇṭu)	Dhanañjaya	GLM	
46	Dhanwantari Guṇāguṇa Yogaśata	—	ASC	

1	2	3	4	5
47	Dhanwantari Nighaṇṭu	—	SAO, BJK, OLM, OIB, ASC, FSM, SBB, IOL, ALM, GOM, TML, vali Nighaṇṭu ROR KBC GOM MJK	Anandasrama, Poona, 1896 (with Paryāyār ṇava), (with Rāja Nighaṇṭu) 1925.
48	Dhanwantariya Nighaṇṭu	Trimalla		
49	Dravyacihna	—		
50	Dravyadaśārtha Nirūpaṇa	—		
51	Dravyaguṇa	Puruṣottama S/o Mādhava GS/o Cakradatta.		
52	Dravyaguṇa	Nārāyaṇa Dāsa	NLP, RLM	
53	Dravyaguṇa	—	NLP	
54	Dravyaguṇa	Gopāla	RLM	
55	Dravyaguṇādarśa Nighaṇṭu		RLM	
56	Dravyaguṇādhiraṇa		RLM	
57	Dravyaguṇa Kalpavalli		GOM	
58	Dravyaguṇākara	Harīśana Sen.	ALM, GOM, KBC, (Author-Mudgala)	
59	Dravyaguṇa Pāṭha	—	GOM, SAO	
60	Dravyaguṇa Saṅgraha	—	GOM	
61	Dravyaguṇa Saṅgraha	—	GOM, SBB	
62	Dravyaguṇa Saṅgraha	Cakrapāṇi	RLM	1 Devendra Nath Sen Calcutta, 1871.

63	Dravyaguṇa Saṅkalanam	—	ARM	Venkateswara Press, Bombay, 1896.
64	Dravyaguṇaśataka	—	GLM	
65	Dravyaguṇaśataśloki, or Śataka	Trimalla S/o Vallabha-Bhaṭṭa	BOR, OIB, SBB, CSC, ROR, ASC, ALM, BHU, GOM, JMK.	
66	Dravyaguṇa Vicāra	Trimalla Bhaṭṭa	SBB, AGC (Author Ratnākara)	
67	Dravyaguṇa Vimarśa	—	SBB	
68	Dravyaguṇa Viveka	—	ASC	
69	Dravyamuktāvalī (with Guṇāpāṭha)	—	GOM	
70	Dravyamuktāvalī	—	RAS, ADV.	
71	Dravyanāmagaṇa-kathanam	—	GLN	
72	Dravyaniṇaya Nighaṇṭu	—	GLN	
73	Dravyanāma Nirṇaya	—	ASC	
74	Dravyaniścaya Sāra Saṅgraha	—	GOM	
75	Dravya Padārtha Pratinidhi	—	OIB	
76	Dravya Parīkṣā	—	ASC	
77	Dravyaprakāśa	—	ASC	
78	Dravyaprakāśaka	Rucidatta	CSC	
79	Dravyaratnākara	—	ASC, GOM, ADV (Author-Mudgala)	

1	2	3	4	5
80	Dravyaratnāvali	—	GOM, SAO, OLM ARM, OLM, GMP	
81	Dravyasaṅgraha	—	OLM, GMP	
82	Dravyasāra Saṅgraha	—	GLN	
83	Dravyasiddhi (Guṇapāṭha?)	—	OLM	
84	Dravyavaiśeṣika	—	GOM	
85	Dravyāvali	—	KBC	
86	Dravyāvali (Dravyakoṣa)	Mādhava or Mahādeva	GPH	
87	Dravyāvali Nāmanirṇaya	Candraṭa	ASC	
88	Dravyāvali Nighaṇṭu (Nighaṇṭunāmālā)	Mahendra Bhogika S/O Kṛṣṇa Bhogika	BOR, SBB. Some of the MSS are named as Dhan- wantari Nighaṇṭu, Nighaṇṭu Śeṣa or Dravyāvali Samuccaya.	See Dhanawantri Nighaṇṭu
89	Dravyāvali Samuccaya	Mahendra Jain S/O Kṛṣṇa Vaidya.	ROR	See Dhanwantari Nighaṇṭu
90	Ekadravya-Q. in Yoga- Ratna Samuccaya of Ananta Kumāra.	—	NCC	
91	Ekadravya vinīscaya	—	MLT, See NCC	

92	Ekākṣara Nighaṇṭu	—	MJK, NLP.
93	Ekākṣara Nighaṇṭu	Sadācārya	TKS
94	Ekākṣara Nighaṇṭu	Mādhava	TKS
95	Ekākṣara Nighaṇṭumālā	—	NLP
96	Ekākṣari Nighaṇṭu	Prītikara S/O Kṛṣṇa	OIB
97	Gadavinoda Nighaṇṭu	—	NCC
98	Gaṇanighaṇṭu	Candra Nandana	ASC, ACC
99	Guḍūcyādī Nighaṇṭu (See Dhanwantari Nighaṇṭu.)	Dhanwantari	NCC
100	Guṇacandrikā	Ghaṇaśyāma Sūri	NCC
101	Guṇacintāmaṇi (Referred to in Gikitsāsārasaṅgraha)	—	NCC
102	Guṇādarśa	—	NCC
103	Guṇāguṇa	Trimalla	NCC
104	Guṇāguṇa Grantha	—	Ananda, See NCC TRU., ROR, See NCC.
105	Guṇāguṇa Śataśloki	Trimalla	Ananda.
106	Guṇāguṇī	Suśeṇa	NCC
107	Guṇajñāna Nighaṇṭu	—	NCC
108	Guṇakarmanirdeśa	—	NCC
109	Guṇamālā	—	NCC
110	Guṇa Nighaṇṭu	—	NLP
111	Guṇa Pāṭala	—	NCC.
112	Guṇapāṭha	Arunāgiri Bhiṣak S/O Ramcandra	GOM, MLT, TML OLM, IOL

1	2	3	4	5
		(of Bhārgava- gotra) —		
113	Guṇapāṭhakāvya	Vrajabhūṣaṇa	Ananda, See NCC ACC, MLB, BIK, BOR, OLM, See NCC.	—
114	Guṇaratnākara			
115	Guṇaratnamālā	Bhāvamiśra	ASC, SBB, IOL, MJK, ROR (with Stabaka)	—
116	Guṇa Saṅgraha	Soḍhala	BOR	
117	Guṇasāra Samuccaya	Nṛsimha Paṇḍita of Kashmir.	OLM	
118	Guṇayoga Prakāśa	—	NCC	
119	Hanuman Nighaṇṭu	—	ASC	
120	Hṛdayadīpaka Nighaṇṭu	Bopādeva	TML, ASC, OIB, ROR, MLU, MJK, NLP.	J. R. I. M. (BHU), Vol. 3, No. 2, 1969, Ed. P. V. Sharma
121	Indrakoṣa (Rājendrakōṣa)	Ramcandra S/O Prabhākara (com- posed under order of Indra Singh, King of Gauḍadeśa.	ASC (S. 1868) quoted by Kṛṣṇa Rāma Bhaṭṭa in Palāṇḍu Śataka.	
122	Indra Nighaṇṭu	Indu	Quoted by Kṣīra swāmī.	
123	Indu Nighaṇṭu			

124	Kaiyadeva Nighaṇṭu	—	See, Pathyapathya Vibodhaka.	
125	Kāśirāja Nighaṇṭu (Same as Madanapāla Nighaṇṭu)	—	GLN	
126	Keśava Nighaṇṭu (Keśava-kalpadruma)	Keśava	NCC	See Kalpadrukoṣa
127	Koṣa Kalpataru (Druma)	Viśwanath Vaidy (1629-76 A. D.) S/O Narayaṇa of Atreyagotra. Physician at Devālaya in Vidarbha; Patronised by Jam Sattarsal of Navanagar; composed prior to 1649 A. D.)	NCC	
128	Laghu Nighaṇṭu	—	See Auśadhi Nāmamāla	—
129	Madanapāla Nighaṇṭu or Madanavinoda.	Madanapāla	GOM, ASB, OIB, ASC, ROR, (S/O Haricandra) CSC, GLM, SBB, MJK.	1. Nandikōra Sāstri, Benaras, 1933. 2. Lakṣmi Venkateśwara Press, Bombay, 1961 Chowkhamba Vidya Bhavana, 1971.
130	Mahauśadha Nighaṇṭu	Aryadaskumar Singh	—	

1	2	3	4	5 (with Hindi Com.)
131	Mūlikā Prakaraṇam	—	TML	(with Hindi Com.) —
132	Mūlikānukramaṇikā	—	TML	
133	Mūlikā Siddhi Saṅgraha	—	TML	
134	Nāmaguṇa Sāra Saṅgraha	—	BOR	
135	Nāmamālā	Bhojarāja	TKS	
136	Nāmamālā Śabda Sanketa- kalikā	Dhanwantari	SBB	See Maṇḍanavinoda.
137	Nāmamālā Sūtra (Madan- Vinoda Nighaṇṭu)	Madana Pāla	BHU	
138	Nāmamātṛka Nighaṇṭu	Varadarāja	TKS	
139	Nāmaratnakāra Nighaṇṭu	Madanapāla	ASC	
140	Nāmasaṅgraha Nighaṇṭu	Bhārgavācārya	TKS	
141	Nāmāvali	Govardhana (Nātha)	NCC (Alwar, Bik, BOR), MJK (author-Govar- dhana Dhīra)	See Auśadhanāmāvali
142	Nighaṇṭu	—	BHU	
143	Nighaṇṭu	Jaimini	TKS	
144	Nighaṇṭu	Bopadeva	SBB, ROR, GLN	
145	Nighaṇṭu	Kaiyadeva	MLU	
146	Nighaṇṭu		OIB, ABS, SBB	See Hrdayadīpaka Nighaṇṭu See Pathyāpathy vi- bodhaka.

147	Nighaṇṭu Cūḍāmaṇi	—	SBB	See Dhanwantari
148	Nighaṇṭu Dravyāvali	Mahendra	ROR, SBB (Nighaṇṭu-Mahe- ndra Vaidya).	Nighaṇṭu
149	Nighaṇṭu Nāma Guṇa Saṅgraha	Dhanwantari	SBB	See Dhanawantari
150	Nighaṇṭu Nāmamālā	—	—	Nighaṇṭu See Dravyāvali
151	Nighaṇṭu Nāmāvali	Govardhana Nātha	ROR, BOR, MLA	Nighaṇṭu
152	Nighaṇṭu Prakāśa	Jośi Vaidya Bapu Gangadhara	HAM	See Dravyāvali
153	Nighaṇṭu Koṣa	—	ROR	Nighaṇṭu
154	Nighaṇṭuratnākara	Viṣṇu Vāsudeva Godbole	HAM	
155	Nighaṇṭu Ratnākara	K. Navre	—	Bombay, 1967
156	Nighaṇṭu Samaya	Dhananjaya	ROR	Nirṇaya Sāgara, Bombay, 1936.
157	Nighaṇṭu Sāra Bhajanam	—	GLN	
158	Nighaṇṭu Śeṣa	Hemacandra	BOR	L. D. Bhāratiya Sans- kriti Vidya Mandira, Ahmedabad 9, 1968.
159	Nighaṇṭu Saṅgraha	Several authors	OLM	1850.
160	Nighaṇṭu Saṅgraha	Raghunathji Indrāji (kato	—	

1	2	3	4	5
161	Nighaṇṭu Sāra	Bhatta) Rādhākṛṣṇa	SBB, MJK (Nighaṇṭusāra Saṅgraha) Ananda.	
162	Nighaṇṭu Sāra	Raghunāyaka	SBB	
163	Nighaṇṭu Sāra	—	ASC.	
164	Nighaṇṭu Sāra	Aśoka Malla	ROR	
165	Nighaṇṭu Śāstra	Mahendra	BOR	
166	Nighaṇṭu Śeṣa (Dravyāvali Samuccaya)	Bhogika		See Dhanwantari Nighaṇṭu
167	Nighaṇṭu Vaidyakam See Dhanwantari Nighaṇṭu.	Dhanwantari	ROR, SBB	
168	Nirṇaya Nighaṇṭu	Vaidyanātha	SBB	
169	Paryāya Māñjarī	—	GOM, OLM	
170	Paryāyaratnamālā	Mādhava	ASC, BHU, SBB, NLP (author- Mahéśwara Miśra)	Patna University Journal, Vol. II, 1946, Ed.—Tarapada Chowdhury.
171	Paryāya Muklāvali	Haricaraṇa Sena	ASC, TPC, ADV. (author-Hema- candra sena)	Journal of Bihar Re- search, Society, Vols. XXXI & XXXII, Patna, 1947. Ed.— Tarapada Choudhury.
172	Paryāyārṇava	Nilakaṇṭha Miśra	NLP	Ānandāśram, Poona, 1896 (with Dhan-

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				wantari Nighaṇṭu)
173	Pathyāpathya Nighaṇṭu See	—	BOR, Anand.	
174	Pathyāpathya Vibodhaka. Pathyāpathya Nighaṇṭu	Viśwanātha Sen	KBC, ADV	Khemaraja, Bombay. (with Hindi Com.)
175	Pathyāpathya Nighaṇṭu	Kavi Trimalla	HAM	Benaras, 1869.
176	Pathyāpathya Vibodhaka (Kaiyadeva Nighaṇṭu)	Kaiyadeva S/O Sāraṅga S/O Padmanābha	TML, OIB, BOR, ALM, ROR, FSM, DSV, NLP, RLM.	Lahore, 1928.
177	Rāja Nighaṇṭu	—	Ananda, ASC, CSC SBB (Nighaṇṭuraja) See 'Abhidhāna- cūdāmaṇi'	1. Calcutta, 1933 (2nd Ed) 2. Ananda, 1925, Poona.
178	Rājavallabha Dravyagaṇa or Nighaṇṭu	Nārāyana Dāsa Kavirāja	CSC, TML, DSV, ASC, NLP (Nighaṇṭu)	1. Calcutta, 1968. 2. Venkateswara Press, Bombay, 1895 (with Hindi Com.)
179	Rasamūlikā Nighaṇṭu	Bāhaṭa	OIB	
180	Rasa Nighaṇṭu	Mādhava S/O Kodanārāma Cakrapāṇi	MLT, ARM (Bāhaṭa) GOM ACC, TKS, RLM	
181	Śabda Candrikā			
182	Śabda Pradīpa	Surapāla	ACC, TPC, (auth- or-Sureśwara)	—
183	Śabdaratna Pradīpa	—	ASC, ACC (author- Kalyāṇa Malla)	—

1	2	3	4	5
184	Śabdaratnāvalī	—	RLM	
185	Śabdasamgraha Nighaṇṭu	Agastya	TKS	
186	Śabdasāra Nighaṇṭu	—	TKS	
187	Śadrasa-Nighaṇṭu	—	—	See Abhidhāna ratnamālā
188	Śadrasarūpaguṇa	Lakṣmaṇa Candrar (Sam. 1903)	ROR	
189	Śākaṇṭh	—	OIB	
190	Śāka Nighaṇṭu	Śīta Rāma Śāstri	JIM	
191	Śāligrāma Nighaṇṭu	Śāligrāma Vaiśya	—	Venkaṭeśwara Press, Bombay, 1953
192	Śaṇjñā Samuccaya	Śivadatta Miśra	RLM	
193	Śārasamgraha	—	ROR, GOM, MLK, Ananda	
194	Saraswatī Nighaṇṭu	Śāśwata	TKS, Ananda	Colombo, 1885.
195	Śārottara Nighaṇṭu	—	GLN	
196	Śataṣadhāni	—	GOM	
197	Śeṣarāja Nighaṇṭu	—	ADV, KBC	
198	Siddhamantua	Kaśava Paṇḍita S/O Mahādeva	GOM, BOR, ASC, NLP.	Bombay, 1892 Ed. Śaṅkaradāji Pade
199	Siddhasāra Nighaṇṭu	—	ASC, BJA, MJK,	Poona, 1952.
200	Śivakoṣa (with Com. Śiva Prakāśa).	Śivadattā Miśra	BOR, BLO GLN	
201	Siddhaṣadhamūlagrahaṇa Vidhi	—		

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202	Siddhausadha Nighaṇṭu	—	TKS	
203	Sūryarāyāndhra Nighaṇṭu, Vol. 1-7.	—		
204	Tāmbūlaguṇa	—	GLN	
205	Tāmbūlamāñjarī	—	OIB	
206	Upavana Vinoda	Śāraṅgadhara	KBC	
207	Upavana Vinoda	Malayaśūri	NCC	
208	Upavana Vinoda Kautuka	Kavīndrācārya	NCC	
209	Vaidyaka Guṇasāra	—	ROR	
210	Vaidyakoṣa	Cakrapāṇi	GPH	
211	Vaidyakoṣa	—	ASB	
212	Vaidyakoṣa	Candraṭa	GPH	
213	Vaidyakoṣa	Dauji	HAM	
214	Vaidyaka Nighaṇṭu Viśeṣa	—	SBB	
215	Vaidyakaśabda Sindhu	Umeśacandra Gupta	—	Calcutta, 1894.
216	Vaidyanāmaṁālā	—	BOR	
217	Vaidyanighaṇṭu	Mahendra (?)	BOR	
218	Vaidya Nighaṇṭu	Bhāvamiśra	BOR	
219	Vaidya Nighaṇṭu	—	GOM, TML, OLM, SBB, (Vaidyaka Nighaṇṭu)	
220	Vaidyaka Nighaṇṭu	—	MLU	
221	Vaidya Nighaṇṭusāra	Cikkana Pandita	OLM	

1	2	3	4	5
222	Vaidyāvataṁsa	Lolimarāja	ROR, BOR, ASC, OIB, GMP, MJK	1. Ahmedabad, 1908 (with Gujarati Trans). 2. Motilal Banarasi- das, 1967 (with Hindi Com)
223	Vastugunāguṇa	—	OIB	
224	Vastugunā Kalpavallī	—	GOM	
225	Vastugunā Nirṇaya	—	GOM	
226	Vṛkṣāyurjñānam	—	MLU(S. 1931)	
227	Vṛkṣāyurveda	—	MLT	

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ABBREVIATIONS

ABS	= Akhil Bharatiya Sanskrit Pariṣad, Lucknow.
ACC	= Aufrecht's Catalogus Catalogorum.
ADV	= Atrideva's Āyurveda kā Bṛhad Itihāsa.
ALM	= Ādya Library, Madras.
Ananda	= Anandāśrama, Poona.
ARM	= Ārṣa Rasāyana Śālā Muktyala
ASB	= Royal Asiatic Society, Bombay.
ASC	= Asiatic Society, Calcutta.
AUL	= Āndhra University Library.
BJA	= B. J. Institute, Ahmedabad.
BJK	= Bharatiya Jñanapīṭha, Kashi.
BHU	= Banaras Hindu University, Collections at Central Library & Bharat Kala Bhavan.
BLO	= Bodelian Library, Oxford.
CSC	= Calcutta Sanskrit College.
DSV	= Darbhanga Sanskrit Viswavidyālaya.
FSM	= Florentine Sanskrit MSS (Aufrecht)
GLN	= Govt. Library, Nepal.
GMP	= Govt. Mss. Lib. (Professors), Bombay.
GOM	= Govt. Oriental MSS. Lib; Madras.
GPH	= Gurupada Haldar (Vṛddhatrayi.)
HAM	= Bhagawat Singhji: History of Āryan Med, Science.
IHM	= Institute of Hist. of Med., Hyderabad.
IOL	= India Office Library, London.
JIM	= Jolly's Indian Medicine.
KBC	= Kavirāj Birajācaran (Vanaśadhi Darpaṇa).
MJK &	= Ranavir Pustakalaya, Jammu & Kashmir.
RLJ	

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MLA	=	Maharaja Lib. Alwar.
MLB	=	Maharaja Lib. Bikaner.
MLT	=	Manuscript Library, Trivandrum.
MLU	=	Oriental Lib. Udaipur.
NCC	=	New Catalogus Catalogorum. (Raghavan, Madras).
NLP	=	National Library, Paris.
OIB	=	Oriental Institute, Baroda.
OLM	=	Oriental Lib. Mysore.
OLU	=	Oriental MSS. Lib., Ujjain.
PGI	=	Post graduate Institute of Indian Medicine Library, B. H. U.
RAS	=	Kalpद्रुकोष.
RLM	=	Rajendra Lal Mitra : Notes on Search of Sam. MSS.
ROR	=	Rajasthan Oriental Research Institute, Jodhpur.
SAO	=	Sanskrit Academy, Osmania University.
SBB	=	Saraswati Bhavan, Varanasi.
TKS	=	Trikāṇḍaseṣa (Appendix).
TML	=	Saraswati Mahal Library, Tanjore.
TPC	=	Tārāpada Chowdhury (Paryaya Ratna-mālā)
TRU	=	Travancore University.
ULT	=	University Lib., Tubingen.

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